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ORIGINAL ARTICLES

DIAGNOSTIC AIDS IN DISEASES OF THE LUNG AND PLEURA.*

[The enclosed stereoscopic photographs can be viewed through an ordinary hand stereoscope.—Ed.]

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(Two stereoscopic cards for illustration.)

We all agree that in the early diagnosis of many diseases lies the prospect of their cure. Cancer and tuberculosis head the list of maladies which are too often permitted to steal a march on us and to become utterly hopeless before their true and dangerous nature is recognized.

Whether the patient himself or his doctor be to blame I shall not discuss any further than to state that the fault does not lie altogether in our diagnostic ability or faulty methods.

The diligent and progressive workers in the therapy of diseases of the chest have made strenuous efforts to devise means by which pulmonary tuberculosis may be recognized in its incipient stage and have added many valuable aids to the older, approved methods of examination. The tuberculin test, for instance, by either the cutaneous, subcutaneous or conjunctival methods, has recently become a very popular adjunct, and is regarded by many the deciding factor in doubtful cases. Its reliability is at present an animated topic of discussion in the medical world, and its value as a diagnostic agent will soon be determined by those who test it in thousands of cases.

I desire to call your attention to another diagnostic aid, the real worth of which is, I believe, not fully appreciated. I refer to the "Radiograph of the Chest."

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* Read at the Fifty-Ninth Annual Session of the Illinois State Medical Society, Quincy, May 19, 1909.

While the literature of this diagnostic aid dates back as far as 1896 (Bouchard[1]), and important contributions from reliable sources are accumulating—Rieder,[2] Krause,[3] Holding,[4] Holland[5]—there still exists a lack of interest in this valuable adjunct.

This tardiness may be attributed to two causes—namely, the lack of facilities for the average physician in obtaining good radiographs, and then the expense connected with the procedure. Both, of course, are obstacles and a check to their general use, but what have cost and inconvenience to do with scientific facts? The truth remains that good radiographs demonstrate disease processes in the thorax.

I shall here exhibit a number of radiographs of tubercular chests which will convince you of their value as diagnostic aids.

The skiagraph is an accurate record of the presence and location of lesions within the chest. Its interpretation is submitted for examination to the acutest of our senses, the sense of sight. The eye can not be so easily deceived as the sense of touch or hearing . "Seeing is believing" is an old proverb, and may be applied in the examination of the *x*-ray plate.

First of all, I wish to demonstrate that tubercular diseases, even in the early stages, may be shown by means of stereoradiographs.

We have taken a large series of radiographs of chests of persons in all stages of tuberculosis, including the incipient stage, where neither the physical signs nor sputum examination proved its existence, and our findings and lesions therefrom are here reported.

It is preferable to use the fluoroscope before taking the radiograph, because it shows dynamic conditions, while the plate shows only static conditions.

By the use of the screen one may watch the excursions of the diaphragm and the beating of the heart, and it is possible to examine the chest at different angles. In the radiograph we have, however, the advantage of obtaining a permanent record, with perfect details of structure, and the procedure of taking it does not expose the operator nor the patient to the *x*-rays like that of fluoroscopy.

The difficulty we first encountered was that of differentiating the shadows of an active tubercular lesion from the scar shadows of a healed-out old tubercular process.

Mottled spots are found in radiographs of chests of perfectly healthy persons, even when a disease of the lung is not suspected. To a novice this fact, of course, must be confusing. How is he to judge from a radiograph whether a man has tubercular disease of the lung, when nearly all chest radiographs show some spotted shadows? The interpretation of

1. Bouchard: Gaz. des Hosp., 1896, p. 147.
2. Rieder: Zur Fruhdiagnose der Lungentuberculose mit Hilfe der Roetgenstrahlen. Beitr. z. Klinik d. Tuberculose Bd. xii, p. 195.
3. Krause: Jour. Amer. Science, March, 1909.
4. Holding: The diagnosis of incipient tuberculosis by the Roentgen Rays. New York State Med. Jour., May, 1908.
5. Holland: Diagnosis of Pulmonary Tuberculosis by means of the *x*-rays. Liverpool Medico Chir. Jour., July, 1908.

these mottled spots has been a subject of my investigation, and I should like to make this point clear.

Some authors have already mentioned that the posttubercular scar, the latent process, gives a clearer outline of shadows than the active tubercular lesion, but, since the clearness of a shadow is dependent upon the distance of the lesion from the sensitive photo-plate, one can readily see how deceptive this argument must be. A fibrous deposit on the anterior surface of the lung will give a spread and indistinct shadow, while the same size of scar on the posterior surface of the lung will give a clear and distinct outline on the plate, providing both pictures are taken with the plate at the back.

Furthermore, the overlapping shadows of solid organs, as the liver and heart, will obscure from our view the weaker shadows of the tubercular lesion.

To overcome this drawback I have taken *"stereoscopic radiographs"* of active tubercular chests (Fig. 1), and for comparison the chests of persons in posttubercular states (Fig. 2), where the physical signs were negative. The plastic effect of structure brought out by means of this procedure demonstrates the real conditions so vividly that the two conditions may be readily differentiated. We may even distinguish the remains of healed tubercular lesions from an active one in the same lung. The distinctive feature of the active and posttubercular state is this: The active process shows the foci of infection in roundish shadows surrounded by a halo, which merge into other similar foci. The halo no doubt represents the area of infiltration around the deeper shadow, the tubercular process itself.

The healed-out posttubercular scars, however, stand out clearly, like spiders, surrounded by translucent lung tissue.

It requires a stereo-radiograph to bring out the contrast very clearly; the single (non-stereoscopic) plate is, on account of the flatness of the picture and the overlapping of shadows of heart and bones, not efficient. A study of a large number of these radiographs, by comparing them with the physical signs of the patient, will soon convince even the skeptical of its real advance in the diagnosis of tubercular diseases of the chest.

The technic of taking stereoradiographs is not complicated, and, on account of its distinct advantage, recommended in deciding the diagnosis in doubtful cases.

Another condition in which the stereographs are of advantage is in the differentiation of a pleuritic effusion from a lung abscess.

Pulmonary abscess usually follows pneumonia, aspiration of foreign bodies, rupture of lung or infarct and sometimes follows abscesses in neighboring organs. Pleuritic effusions, on the other hand, are either associated with or follow inflammatory conditions of lung or pleura, or they may be due to purely mechanical obstruction to the circulation, associated with valvular disease. The effusion of a serofibrinous exudate is most frequently due to tubercular disease of the lung, so that we must look for other symptoms of tuberculosis in such cases.

The studies of Brauer,[6] Murphy,[7] Konzelman,[8] Lord,[9] Bowditch[10] and others have long ago established this fact, and the consensus of opinion of the best observers is that from 45 to 75 per cent. of all cases of serofibrinous effusion are of tuberculous nature. In a few cases, however, the diagnosis is uncertain and a pleural puncture is required to reach a decision. In these cases a good stereo-radiograph may take the place of the trocar. It will show the circumscribed lung abscess standing out quite distinctly in plastic effect when the two plates are merged into one by the use of the prisms.

A practical demonstration of this will do more in illustrating this fact than any description. I show here a stereo-radiograph of a lung abscess, which was of great assistance to me in the operative treatment and was in a measure instrumental in suggesting to me a new

Fig. 3.—Woman's chest, showing normal location of heart and liver. A, apex scapulæ; B, upper border of liver. Note distance between them.

method of treatment of lung abscesses. The case will be reported and the method fully described at the 1910 meeting of the American Medical Association. I desire to present the patient here for examination, together with the radiographs before and after operation.

In contradistinction I also present a stereo-radiograph of a left pleuritic effusion. Here we have an entirely different picture. The density

6. Brauer: Lungenchirurgie.
7. Murphy: Oration on surgery. Jour. A. M. A., August, 1898.
8. Konzelmann: Ueber den Einfluss pleuritischer Exudate auf den Verlauf der Lungentuberculose. Beitr. zur Klinik der Tuberculose, Bd. x, Heft 4.
9. Lord: Treatment of Serofibrinous Pleuritis. Boston Med. and Surg. Jour., April 15, 1909.
10. Bowditch: Transact. Am. Climatolog. Assoc., Vol. vi, 1889.

of the shadow shows the fluid to have filled out the entire left chest, pushing the heart to the right, so that the apex is behind the sternum and the right border of the heart two and one-half inches to the right of the right border of the sternum. Comparing the two radiographs, one can not doubt the value of this newer and perfected diagnostic aid—namely, the stereo-radiograph of the chest for cases in which the diagnosis is doubtful.

During the past two years we have employed the bismuth vaselin paste for diagnostic and curative purposes in empyema, and experience has taught us that some cases of empyema had resulted from rupture of a lung abscess into the pleura. This could be ascertained by radiographs which present to view the shadow of the injected paste, outlining a separate cavity within the lung tissue besides that of the pleural

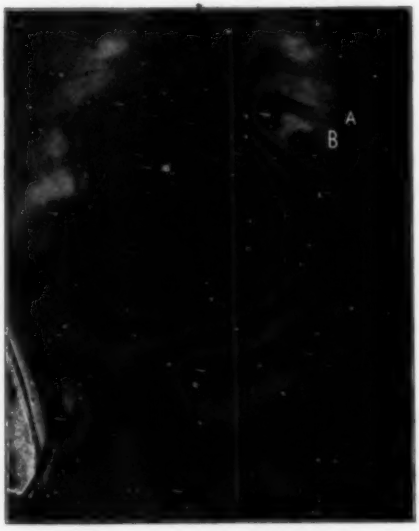

Fig. 4.—Same woman's chest when corset is worn. Note displacement of liver upwards, A and B; also heart pushed to left.

cavity itself. The radiographs here shown clearly illustrate this fact. Whenever the patient coughed out some of the paste it indicated that an abscess had existed previous to the empyema and the bronchus leading into it was still open.

While the injections of the bismuth paste are now principally used for therapeutic purposes and radiographs are not regarded by many as absolutely necessary, I found them very instructive and a valuable guide in the treatment. They inform us of the size and the shape of the cavity, and frequently disclose the origin of the disease. The abscess may originate in the spleen, liver, appendix, ribs, etc. I have, therefore, taken them in all cases.

I shall show several slides which will illustrate interesting examples of each variety. The cases will be described in detail in a future publication.

Especially interesting is the stereoradiograph of an empyema which for twenty-eight years persisted in daily discharging from two to four ounces of pus through a rubber tube drainage. The picture of the anatomic changes produced in the chest by this prolonged suppuration, as shown in this radiograph, are very instructive. Nature has made an attempt to obliterate the cavity by drawing the ribs, spine and diaphragm toward the center, until the cavity has become a small, shriveled, pear-shaped pouch.

This stereoscopic view is especially instructive, because it shows in plastic effect the outline of this pouch, injected with two ounces of paste, which were left in for absorption, and which also accomplished the main object of the injection—namely, the cessation of discharge and closure of the sinus after the tenth injection.—Case Illustrated in *The Journal of the A. M. A.*, October, 1909.

Examples such as I have here shown must tempt us to a routine employment of radiographs when the bismuth paste is injected for curative purposes.

In connection with these foregoing studies we have made an observation which seems to me important enough to be included in this presentation of diagnostic aids in diseases of the chest. In comparing a large number of chest radiographs taken for various conditions, we incidentally observed that the upper border of the liver in the male chest was considerably lower than in the female.

A series of 55 consecutive radiographs (36 of men and 19 of women), most of which had been taken for the purpose of discovering incipient tuberculosis, were examined and the following results obtained:

Upper border of liver between the	Male chests.	Female chests.
12th costo-vert. articul.	3	1
11th costo-vert. articul.	22	1
10th costo-vert. articul.	11	15
9th costo-vert. articul.	..	1
8th costo-vert. articul.	..	1
7th costo-vert. articul.	..	..
	36 cases.	19 cases.

All the radiographs of women had been taken without their corsets on.

Comparing these figures, we note that with few exceptions the upper border of the liver in men is one to two inches lower than that of women.

We are accustomed to ascertain the liver dullness by percussion of the anterior and lateral aspect of the chest, taking the anterior ribs as landmarks, but in the study of radiographs we must take the costo-vertebral articulations as landmarks, because they are fixed points. The posterior portions of the ribs give a clear, distinct shadow. The anterior

portions do not show on the plate when the radiograph is taken by the usual method (the plate at the back), and therefore could not serve us as landmarks.

This observation suggested that habitual tight-lacing might have produced a permanent upward displacement of one-half to two inches, or a flattening out of the liver, producing this shadow.

Thereupon, the following experiment was carried out: Radiographs of the chests of women with and then without their corsets were taken (Figs. 3 and 4), and by exact measurement on the plates the actual displacement of the liver, heart, scapula and the change in the angle of the ribs were noted. With the corset snugly laced the upper border of the right lobe of the liver had been further displaced from one to two inches upward. The heart was displaced upward from one-half to one inch and slightly pushed to the left side. The ribs after lacing changed their angle from five to ten degrees downward, and the intercostal spaces diminished at least thirty per cent., especially in the lower part of the chest.

The apex scapulæ, although not a fixed point, because it changes with the motion of the arms, was nevertheless a valuable landmark, because all radiographs had been taken with the arms downward.

In the study of diseases of the chest these anatomical differences, if corroborated by others who have the opportunity of examining large series of chests, must be of considerable importance, and I shall keep further record in the future of all cases to determine whether the findings in this first series will repeat themselves.

My experience with radiography in diagnosis of diseases of the chest has resulted in these conclusions: That imperfect or even mediocre radiographs of the chest are worthless or even misleading.

That perfect radiographs are of great assistance in differentiating effusions in the pleura from consolidations, empyema from lung abscess, by outlining clearly the size and contour of both, when filled with bismuth paste, thus assisting in their rational treatment.

Of greatest assistance, however, I consider the stereoradiograph of the chest for recognizing pulmonary tuberculosis in its earliest stages and in differentiating the active from the latent tubercular process of the lung.

P. S.—Since the presentation of this subject I have made an anatomic study of the bronchial tree by means of stereoscopic radiographs, which has proven to be interesting not only from an anatomic point of view but will throw a strong ray of light into the mysteries of radiography of the chest, and increase the diagnostic value of roentgenography as an aid in the diagnosis of early pulmonary tuberculosis.

I take this opportunity to enclose a stereoscopic card (Fig. 4) reproduced from the original negative, and shall, at this time, make only a few explanatory remarks and promise to publish in detail the results of my investigation of this subject later on.

The entire bronchial system is here shown in its plastic effect, resembling the branches of a withered tree. The relative size and distribution of bronchi and

their division into the minute branches can be traced down to the air vesicles; in fact, in places the vesicles are filled with bismuth paste, resembling bunches of cauliflower.

The trachea divides into the bronchi opposite the sixth dorsal vertebra, the right bronchus being practically a continuation of the trachea, while the left takes an angle of 40 degrees.

This radiogram also illustrates a rare example of a chest in which the lung is perfectly clear from other shadows, and, furthermore, it demonstrates the superiority and advantage of the stereoscopic radiograph over that of single plates.

POISONING FROM BISMUTH SUBNITRATE VASELIN PASTE.*

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Bismuth subnitrate has been used for a century or more and no fear was entertained of toxic effects from its use as a medicament or locally as a salve or dusting powder until Kocher's report of a case in 1882. Since that time a number of cases of poisoning from its use have been reported by different observers and the toxic effects have been attributed in some cases to the metallic bismuth and in others to the nitrate element which is converted into a nitrite, causing nitrite poisoning.

Practically all of the reported cases of nitrite poisoning have followed the use of the drug internally and when given in relatively large doses. The conversion of the nitrate into the nitrite has been attributed to bacterial action in the large intestine. The symptoms are those of poisoning from the nitrites, characterized by a considerable fall in blood pressure, a rapid, weak pulse, palpitation, vertigo, dyspnea, tinnitus, nausea and vomiting, and, most characteristic of all, a tawny cyanosis of the mucous membranes and extremities due to the formation of methemaglobin in the blood. Kobert says that the three principal symptoms of poisoning by nitrites are central nervous system irritation and palsies and the formation of methemaglobin in the blood; so that in marked cases we may expect tonic and clonic convulsions, paralysis and coma.

Poisoning from the metallic bismuth of the bismuth subnitrate has not been common and practically all of the cases have been reported from its use as a salve or dusting powder. Kocher's case in 1882 was one of pure bismuth poisoning characterized by an intense ulcerative stomatitis with black pigmentation of the gums and the mucous membranes of the mouth, associated with enteritis and nephritis. The black pigment deposited in the mouth is the sulphide of bismuth and in fatal cases is sometimes found in the intestinal mucosa associated with ulceration. The method of absorption of the insoluble bismuth subnitrate to produce toxic effects is not definitely known. It has been shown that the insoluble bismuth subnitrate is converted into a soluble toxic albuminate when bismuth is used as a dusting powder on raw surfaces. The

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cause of the ulceration in the mouth and the intestine is not known, but might be explained by reason of bismuth acting as a foreign body in the tissues or, as has been shown, by the deposit of bismuth in the blood vessel walls causing obliteration of their lumen.

In spite of these recorded cases bismuth has been used in large doses with little fear of toxic effect. In the past two years especially bismuth subnitrate combined with vaselin has been used extensively for the injection of tuberculous abscesses, sinuses and, to some extent, in empyema cavities, and also as a bone plug. Many reports of the cure of these cases are on record.

With this increased activity in the use of bismuth subnitrate it is of interest to note that cases of poisoning have occurred and some have been reported. It is the purpose of this paper to review briefly the literature of poisoning from bismuth subnitrate vaselin paste and to show that both bismuth and nitrite poisoning have occurred and, in addition, to add two cases of pure bismuth poisoning that occurred under our observation, one with fatal issue.

CASE 1.—A case of pure bismuth poisoning with recovery, reported by A. Don.[1] The case was one of acute suppurative arthritis of the knee complicated by abscess of the thigh. Injection of three ounces of a 33 per cent. bismuth subnitrate vaselin paste was made on Aug. 22, 1908, and another of four ounces on Sept. 9, 1908. Toxic symptoms on September 24 consisted of an ulcerative painful tongue and foul odor of the breath. On October 10 a blue-grey line one sixteenth inch wide appeared opposite the lower incisors. Both sides of the gums, soft palate, pharynx, tongue and cheeks were pigmented. The teeth became loose and the gums soft, spongy and sore. No headache was present. The pulse on one day was 120 and weak. The patient looked ill. On October 10 the thigh cavity was evacuated. On October 26 the blue line was still marked but fading, the teeth were firmer and the pulse below 100. There was no rise in temperature after the first injection.

CASE 2.—A fatal case, reported by H. Eggenberger,[2] following the injection of less than one ounce of paste with symptoms of both bismuth and nitrite poisoning. It is the only case on record where nitrite symptoms were present following the injection of bismuth subnitrate vaselin paste.

The patient was a child aged seven years with spondylitis and an abdominal sinus resulting from the opening of a tuberculous abscess. Toxic symptoms did not occur until six weeks after the injection of 30 grams of a 33 per cent. bismuth subnitrate vaselin paste, when the appetite became poor, nausea and vomiting appeared and persisted. The pulse became rapid, running from 120 to 130. A stomatitis with ulceration and dark brown pigmentation appeared. The abscess was opened and emptied but the intoxication became much worse and nervous symptoms such as nystagmus, trismus, tonic and clonic convulsions of the arms and legs appeared as in uremic cerebral irritation. The patient became comatose, had stertorous respiration and a tawny cyanosis of the face and mucous membranes. He had no diarrhea. Death occurred a few days after emptying the abscess.

Autopsy revealed a distinct hyperemia but no anatomic changes in the central nervous system. Similar changes occurred in the digestive tract, such as punctate hemorrhages in the stomach mucosa and the solitary follicles of the small intestine were red and swollen. At the ileocecal valve a greenish brown ulceration encroached on the contiguous part of the cecum. Bismuth was found chemically in the pigmented areas on the gums. Microscopically

1. Don, A.: Brit. Med. Jour., Nov. 28, 1908, p. 1604.
2. Eggenberger, H.: Zentralbl. für Chir., No. 44, p. 1309.

the kidneys showed hyalin degeneration of the convoluted tubules and desquamation in the straight tubules. The liver showed a round cell lymphocytosis under Glisson's capsule and the spleen showed deposits of the pigment.

CASE 3.—One of pure bismuth poisoning with fatal termination which probably resulted from a chronic nephritis and an acute suppurative focus, reported by Dr. E. G. Beck.[3] The patient was a male, aged 57, with a chronic tuberculous hip with sinuses. Beginning in March, 1908, the sinuses were injected with a 33 per cent. bismuth vaselin paste repeatedly during a period of 60 days in which time about twelve ounces of pure bismuth was used. Toxic symptoms gradually developed with blue pigmentation of the mouth, ulcerative stomatitis, diarrhea, thirst and nephritis. The symptoms gradually subsided and the patient returned to his occupation, though the radiograph still showed deposits of bismuth in the pelvis. Five months later an abscess formed following an injury to the wrist. The patient had a subsequent history of sepsis and died Aug. 16, 1908. Autopsy revealed the mucosa of the intestines huckleberry jam color and an interstitial nephritis. Microscopically and chemically bismuth was found or demonstrated in the liver, spleen, intestines and the heart muscle.

CASE 4.—A case of pure bismuth poisoning observed by Dr. Kauffman. W. B., male, aged 24 years, bookkeeper, entered the Cook County Hospital on Dr. Ryerson's service Aug. 31, 1908, with a diagnosis of tuberculous hip of twenty-one years standing, with old healed and discharging sinuses. On September 8, three ounces of a 33 per cent. bismuth paste and on September 28, six ounces were injected into the sinus. Eleven days later the patient complained of severe pain and burning in the mouth, which increased so much that he took only a little of liquid diet. The gums were swollen and very tender. A gradually widening heavy blue line showed on the gums, the lower lip and on the tongue. Small superficial ulcers appeared on the left side of the tongue. These gradually increased in size and coalesced until larger than the thumb nail. This ulcer was covered with a dirty blue-black membrane. The fauces and throat showed the same swollen and pigmented condition. Salivation was constant, intense and very distressing. The patient complained of headache and obstinate constipation. His general condition was good most of the time with a normal temperature and pulse. The blood showed a leucocyte count of 10,000. The red cells showed no basophilia. Six weeks later, the stomatitis had subsided though the pigmentation of the mucous membranes of the mouth was still present. The patient complaining of pain in the hip and the x-ray showing a necrotic area and deposits of bismuth near the joint, the sinus was opened and the dead bone removed. After five months the sinus had closed. The blue deposit still remained on the gums in a deep blue line, about one eighth inch in width and extending to the very margin of the gums. Both labial and lingual mucosa of the lower jaw was involved. Points of teeth contact on the lips showed the blue outline. Tongue tip and the lateral margins extending to the under surface showed areas of bluish discoloration, solid at first glance but made up of punctate spots about the size of a pin point.

CASE 5.—A case of pure bismuth poisoning running an acute course and terminating fatally, observed by Dr. David. H. F., aged 21, freight handler, entered Cook County Hospital on the service of Drs. Kahlke and Keyes. A diagnosis of tuberculous hip with a sinus opening above Poupart's ligament, was made. On January 19, six ounces of bismuth paste was injected and ten days later the patient complained of soreness of the gums and increased flow of saliva. A light blue discoloration of the gums, linear in character, about one-tenth inch from the incisor teeth on the lower jaw was found. This pigmentation extended and ulceration occurred. Ten days later a most extensive ulcerative stomatitis was present. Both the labial and lingual surfaces of the gums of the lower jaw showed a heavy greenish blue line next to the teeth. The gums were red and swollen and somewhat necrotic at their borders.

3. Beck, E. G.: Jour. A. M. A., Jan. 2, 1909.

The labial, buccal, and lingual mucosa contiguous to the lower jaw was the seat of superficial ulceration, dime size, with gray centers and deep blue to black pigmented edges. The fauces, right tonsil, dorsal and ventral surface of the tongue were the seat of punctate blue pigmentation. The lips were so swollen that the patient could not enunciate clearly. His breath was putrid and salivation to almost the end was extreme. He presented a pitiful picture, lying with his head over the edge of the bed drooling and groaning. He complained of burning and soreness in the mouth, had complete anorexia, some nausea and vomiting and one attack of epistaxis. His bowels were loose, and mucus and blood were passed on different occasions. Emaciation became extreme and his general condition worse though his pulse and temperature were relatively low, 100 to 120 and 99 to 100 degrees respectively until just before his death, which was preceded a day or so by involuntary urination and defecation, insomnia and choreiform movements. At no time were the nitrite symptoms, such as dyspnea, rapid pulse or cyanosis noted.

The laboratory findings were practically unimportant. The blood showed hemoglobin, 60 per cent.; white cells, 12,000 with differential counts practically normal; red cells, 4,000,000 and no basophilic degeneration on repeated examinations. Urinalysis was negative as to albumin and sugar but showed a specific gravity of 1,010 and a trace of bile pigment; microscopically, fine and coarse granular casts were found.

The treatment instituted was enlargement and opening of the sinus with finger curettement under local anesthesia; hot applications over joint and injections of warm olive oil followed by irrigation with hot sterile water and manipulation which succeeded in removing a large amount of pus and liquid paste; tonic treatment, as nutrient enemas and syrup ferric iodid.

Dr. Walter S. Haines, whom we wish to thank for his very kind interest and suggestions in these cases, was unable to personally analyze the specimens of the urine and the bismuth subnitrate used in the paste injected into Cases 4 and 5, and submitted them to Dr. Ralph Webster of the Chicago laboratory, who made the following report:

	Per Cent.
Bismuth subnitrate	99.19
Moisture	.76
Total	99.95

Impurities (arsenic and silenium) absent.

Urines from cases 4 and 5 both contained bismuth in undetermined quantities.

Autopsy on case 5 the day after death showed no gross lesions except marked ulcerative stomatitis with pigmentation of the mucous membranes of the mouth; moderate diffuse nephritis; general enlargement of the mesenteric lymph glands; enlarged spleen; moderate degree of catarrhal enteritis but no pigmentation or ulceration of the intestines as far as examined; two areas in the stomach almost the size of a silver dollar of marked hyperemia but showing no pigmentation. In the lower right quadrant of the abdomen, retroperitoneal and external to the psoas muscle was an abscess containing about eight ounces of thick yellow pus in which were found, free, several masses of vaselin, each larger than an English walnut. At the bottom of the abscess cavity was found a half-ounce of white putty-like material, apparently free bismuth. The abscess did not connect with the spine but led to the sinus connecting the abdominal wall and the right hip joint. Microscopically the tissues of the organs were normal except hyalin changes in the convoluted tubules of the kidneys and some deposit of black pigment in the straight tubules. All of the tissues showed passive hyperemia. The abscess wall showed deposits of black crystals with a wall of round cell infiltration and fibroblasts growing into the foreign material.

CONCLUSIONS.

Poisoning from bismuth subnitrate vaselin paste is more common than we had supposed. Since the report of these cases, in an examination of about twenty-five orthopedic cases in the Cook County Hospital in which bismuth had been injected into their tuberculous sinuses more than once, we found that in six cases there was more or less pigmentation of the gums. In one of the cases extreme blue pigmentation was present on the gums, lips and the cheeks without subjective symptoms. From this we have reason to believe that pigmentation of the gums is an early sign of bismuth intoxication and should be taken as a signal to at least discontinue the administration of the paste.

In the reported cases four of the five received six ounces or less at the first injection and ten ounces or less in toto.

One fatal case occurred after the use of less than one ounce of the paste.

Toxic symptoms developed after the first injection in from ten days to six weeks, both extremes being fatal cases.

The use of the *x*-ray apparently is not a factor which might influence poisoning, as some of these cases were not skiagraphed after the paste was used.

There are acute and chronic cases of bismuth poisoning, the former being fatal with general symptoms and the latter tending to a slow recovery with practically only local manifestations, but the onset of both types is very much the same.

Thus far no case of pure nitrite poisoning following the use of bismuth subnitrate paste is on record, and, though there is but one case where the nitrites played a part in the poisoning, it seems that danger should be avoided by the use of bismuth carbonate.

Impurities in the bismuth subnitrate are not a factor in the poisoning because the metallic bismuth has been found in the local pigmented areas and in two well defined cases the bismuth showed no impurities.

DISCUSSION

Dr. Emil G. Beck, of Chicago, said:—The essayists have rendered a valuable service to the medical profession in reporting these cases, because they serve as a warning to careful use of the bismuth paste. I reported a case of bismuth poisoning to this society a year ago, and sounded a note of warning against the indiscriminate use of the paste. I have employed a method of preventing bismuth poisoning which works exceptionally well. A young man, who received injections of seven hundred and twenty grams of the bismuth paste, six weeks afterward developed a discoloration of the gums, and he lost ten pounds in weight, with other symptoms of bismuth intoxication. I injected one pint of olive oil into the chest sinus, and in twenty-four hours the entire mass was dissolved and withdrawn, and here I show you a radiograph which shows only a little bit of the paste left. The patient has regained the ten pounds he had lost in weight during the bismuth intoxication and is now perfectly well.

When I notice a blue discoloration around the gums, I regard it as a favorable sign and not a poisoning. A slight absorption is needed. If you stop injecting the paste at that point you will have a fine result, and the patients will gain in weight. If the gentlemen will watch for this discoloration around the gum, they will find that it takes place in thirty per cent. of the cases. This, however, is not bismuth poisoning. Curettage of the sinus for removing

the paste is a most pernicious practice that of itself produces rapid absorption of the paste and usually requires an anesthetic which, in severe poisoning of this kind, is a decided factor in causing a fatality. I was fortunate enough to discover, in the early period of my work, the signs indicating bismuth absorption, and of the large number of cases which I have treated I have yet to see a fatal case. The case reported by me in the *Journal of the American Medical Association*, Jan. 2, 1909, was not one of my own, but occurred in the practice of another physician.

Dr. David (closing the discussion on his part):—With regard to the fatal case mentioned, I will say that this patient did not have an anesthetic, and there was simply a finger curettement of the sinus, which at autopsy was shown to connect at some distance with the abscess cavity containing the paste. Injections of olive oil, with hot applications and thorough irrigation with hot water, after the use of the olive oil, were employed in this case, and we removed a considerable amount of the paste in this way.

Dr. Kauffman (closing the discussion):—The latest work by von Lewin, of Berlin, recognizes the fact that all the symptoms, including dyspnea, cyanosis, etc., are due to bismuth and not to the nitrite poisoning.

THE SURGICAL TREATMENT OF APPENDICITIS.*

CLIFFORD U. COLLINS, M.D.
PEORIA, ILLINOIS.

I am well aware that this is an old and threshed-out subject with seemingly nothing new left to say about it, but, while the theory and practice of the medical profession still differ widely, a few remarks concerning it may not be out of place.

For instance, it is generally conceded that the best time to remove an inflamed appendix is in the first twenty-four hours before perforation has taken place. No deaths have occurred in our work where the appendix was removed during the first thirty-six hours of the attack, but the records show that only a small percentage of cases are brought to the surgeon during that period. In considering the reasons why this is the case it becomes apparent that a great part of the responsibility rests with the family physician. It is not within the province of this paper to go into the diagnosis of appendicitis, but when the family physician is called to a patient who has been taken suddenly ill with pain in the abdomen it is his duty to see that patient frequently during the next few hours until the diagnosis is made. It is not sufficient for him to leave some medicine for pain and not see the patient until the next day, for then the very important twenty-four hour period would be lost between his first and second visit.

A patient who has been taken suddenly ill with pain in the abdomen should have his temperature and pulse taken at least every three hours. The physician should see the patient that often or a trained nurse, or some one competent to take the pulse and temperature and report to the physician, should be placed in charge. If the temperature begins to rise and he develops a tenderness in the right lower abdomen in the region

* Read at the Fifty-Ninth Annual Meeting of the Illinois State Medical Society, May 19, 1909.

of the appendix, he probably has a beginning appendicitis and the appendix should be removed. He should not be given an opiate to mash the pain and tenderness until the diagnosis is assured. A placebo is justifiable until that time.

Great care should be taken to get the temperature accurately. A short time ago I was called by the family physician to see a little girl who had been taken ill at 6 o'clock in the morning with pain in the abdomen. The family physician had been called promptly and found tenderness on pressure over the region of the appendix. When I arrived the pain and tenderness were typical, but the temperature, taken with the thermometer under the tongue, was normal. Knowing that appendicitis should cause at least a little rise in temperature, I was disinclined to operate while the temperature was normal. We put the thermometer in the rectum and it still registered normal. An investigation showed that the thermometer had stood at normal before it was placed in the rectum. The mercury was shaken down below the normal mark and the temperature taken once more per rectum. The thermometer then registered 99½° and gave us the conclusive evidence for which we were searching. The little girl was taken to the hospital and the appendix removed just four hours from the beginning of the attack. When it was removed and examined there was a gangrenous area in the mucous membrane.

Of course, if the patient or relatives do not call the physician at the beginning of the attack, or do not accept his advice, the responsibility for the outcome becomes theirs and not his. It will be readily admitted that a few of the patients who are operated on during the first twenty-four hours of the attack might recover from that one attack without operation; but all the patients operated on during the thirty-six hour period are probably saved from a possible peritonitis septicemia, pyemia, septic pneumonia, septic nephritis, abscess formation, fecal fistula, ventral hernia, obstruction of the bowels and a prolonged convalescence, to say nothing of a possible death.

It has been urged that it is extremely difficult at times to get the exact time of the beginning of the attack, and sometimes what has seemed to be the first twenty-four hours of the attack has really been the second or third twenty-four hours. I have a rough working rule by which I am guided in these cases. The early operation must be done within the first thirty-six hours (preferably twenty-four) of the attack and the temperature must not be more than 100½°, nor the pulse more than 110. If there has been an error in getting the time of the beginning of the attack, and the appendix has already been perforated, the pulse and temperature will usually be higher than those figures.

If the patient is not seen by the surgeon during the safe thirty-six hour period the next best plan is to treat him according to the principles laid down by Dr. A. J. Ochsner. Give him nothing by the mouth and allow the intestinal tract to rest. Particularly beware of giving him anything to move the bowels. When the intestines become quiet and peristalsis has ceased the pain will be less severe and the patient

will usually be more comfortable. The head of the bed should be elevated at least eighteen inches and he should lie on his right side. This allows the intestines and omentum to fall around the inflamed appendix and encourages protecting adhesions and lets the pus, if there should be any, gravitate against the outer wall of the lower abdomen and pelvis, which is the safest place for it to be.

Some method should be used which allows warm salt solution to flow slowly and continuously into the rectum, as recommended by Dr. J. B. Murphy. Under this treatment the patient will usually recover. He may have a serious time with peritonitis and approach very near to death's door, a localized abscess may form, or resolution may occur without peritonitis or pus. During this stage of the disease, from the second day on until the condition of the patient improves, I believe that the surgeon had better stay his hand.

I am well aware that there are several advocates of an operation during this period, particularly in the early stages of peritonitis, but my own experience has not been as successful as theirs seem to have been. In our work we have had nine deaths in the last five years following operations for appendicitis. These operations were done between the second and eighth days of the attack. Seven of these operations were done at the homes of the patients in the country and other towns and one was done at the home of the patient in Peoria.

This experience leads me to believe that if the patient is at his home and his appendix has perforated and his condition makes it unsafe to remove him to a hospital, it is safer to treat him according to the principles laid down by Dr. Ochsner than to operate on him. The principles of the Ochsner treatment can be more easily applied under those conditions than an operation can be successfully done. I am also positive that an operation during peritonitis, or after perforation of the appendix has occurred, if done at all, should only be done in a hospital where the patient is under the direct care of the surgeon. And if the patient is in the hospital under the direct care of the surgeon I am inclined to believe that his chances for recovery will be just as good or better if he is put on the Ochsner treatment and the operation is postponed until the inflammation has subsided.

Gynecologists have learned to delay operation in acute salpingitis until the inflammation has subsided, and the pelvis is considered the safest part of the abdomen in which to have inflammation and its products.

The mere fact of letting virulent germs, which the system has not had time to fortify against, flow over the fresh, raw surfaces of the incision is no inconsiderable factor in the danger; and I have seen patients who seemed to be holding their own fairly well against the infection suddenly become worse and die when an incision was made from the third to the eighth day of the attack.

After the acute inflammation has subsided and the pulse and temperature become normal there comes again a time when an operation

can be done safely. If the appendicitis ends in resolution without a perforation it will only be a few days until the safe period for operation is reached.

If the appendicitis is succeeded by peritonitis without abscess formation there will be a longer period of time before any surgery is indicated. After the abdomen has finally become flat, the pain and tenderness have subsided, and the pulse and temperature have become normal there comes a period in which it is safe to remove the appendix. This safe period following the attack is the next best time to operate after the first thirty-six hours of the attack has been allowed to pass without the removal of the appendix.

If a localized abscess forms it becomes the duty of the surgeon to make an incision and evacuate the pus. Time enough should be allowed for the system to fortify itself and contract an immunity against the particular infectious germ causing the trouble. This usually occurs about the tenth day of the attack and is indicated by a lessening in the rapidity of the pulse to about ninety.

It was considered formerly that if a large abscess was evacuated there would be no further trouble because the appendix would surely be sloughed off. More experience has demonstrated that this idea was erroneous. The percentage of appendices sloughing off in an abscess is very small, and in the large majority of cases the appendix is left ready to cause trouble when favorable conditions occur and the right germ happens along to infect it. This fact makes necessary a second operation to remove the appendix after an abscess has been opened unless a sloughed off appendix comes out with the pus or the appendix is found in a location which allows of its safe removal without danger of contaminating the general peritoneal cavity.

After the pus is removed the patient's condition usually rapidly improves. The pain and tenderness subside and the pulse and temperature become normal. It is the practice of some surgeons to wait until the drainage tract has closed before doing the second operation for the removal of the appendix. If the patient is in a hospital and should remain until the drainage tract closes it means a long hospital experience which is debilitating both to himself and his pocketbook. If he leaves the hospital, although he has instructions to return and have his appendix removed as soon as the drainage tract closes, he will probably procrastinate after he gets to feeling better and not return until another attack of appendicitis forces him to return. This is dangerous for the patient and unsatisfactory for the surgeon who earnestly desires to permanently relieve him of the dangers of appendicitis.

If ether or chloroform was administered when the abscess was opened the unpleasant features of the anesthesia is a factor in making the patient procrastinate and not return for a second operation.

For these reasons it is highly desirable that the patient should have his appendix removed and be free from the dangers of future attacks of appendicitis before he leaves the hospital or before he goes from under the surgeon's care.

In an effort to accomplish this I have adopted the following method of procedure which has so far proven safe and satisfactory: Under nitrous oxid gas anesthesia a very short McBurney incision is made to the outer side of the abscess cavity and the pus evacuated. The skin incision is very short, from one-half to one inch long, and the opening through the split muscles is also very small. This small incision is sufficiently large to permit of the escape of the pus and presents a very small area of raw surface for absorption as the pus flows over it. No attempt is made to find or remove the appendix at this time, although the pus is watched closely to see that it does not contain the sloughed off appendix. In two cases we have seen the appendix in the pus and, of course, this stopped further operative procedures. In every case that the appendix was not seen in the pus and a later operation was done for its removal it was found intact with another infection easily possible.

Nitrous oxid gas is the safest and most pleasant anesthetic we have. It throws no additional work on the kidneys, which are apt to be impaired after an acute infection with abscess formation. The entire anesthesia does not usually last more than two minutes and the patient awakens quickly and does not have any of the unpleasant after effects of ether or chloroform anesthesia. There is an inhaler now on the market which can be attached directly to a cylinder of gas. This makes a very portable apparatus that can be easily taken to the patient's home should his condition prevent his removal to the hospital before the abscess is opened.

After the pus is evacuated the patient's condition usually improves rapidly and in a few days he is feeling good, with temperature and pulse practically normal. If he is not already in the hospital he is then taken there for the removal of the appendix.

After the pulse and temperature have remained normal for a week the appendix is removed. This is usually from ten to fourteen days after the abscess has been opened. The usual preparation of the abdomen is made. Adhesive rubber dam, which was brought to the attention of the profession by Dr. J. B. Murphy, is sterilized and placed over the opening of the drainage tract. An incision is made to the inner side of the drainage tract and the peritoneal cavity walled off with gauze. The adhesions around the appendix are separated and it is removed. A drain is placed down to the former site of the appendix and carried out through the drainage tract. The incision is completely closed.

By this procedure all further dangers of appendicitis are prevented by the removal of the appendix before the patient leaves the hospital. The patient's stay in the hospital is markedly lessened by removing the appendix before the drainage tract has closed.

CONCLUSIONS.

1. The best time to remove an inflamed appendix is during the first thirty-six hours of the attack before it becomes perforated.

2. The physician who does not see or hear from his patient for twenty-four hours after his first visit in a case of suspected appendicitis is not doing his full duty to his patient.

3. After the appendix has become perforated the patient will do better if its removal is deferred and he is placed on his right side with the head of the bed elevated and treated according to the principles of the Ochsner treatment, with the Murphy method of continuous rectal saline infusion.

4. After the appendicitis or the succeeding peritonitis has subsided the appendix may then be removed more safely.

5. If a localized abscess forms the pus should be evacuated under nitrous-oxid gas anesthesia.

6. As soon thereafter as the pulse and temperature have remained normal for one week the appendix may be safely removed.

THE PUS APPENDIX.*

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CHICAGO.

Definition.—Any pus inside or outside the appendix caused by the appendix. This will include most of the really acute and some of the chronic cases of appendicitis.

Diagnosis.—It occurs at all ages—our cases run from 19 months to 80 years old—most common from 12 to 30 years.

We always have three cardinal symptoms: pain, tenderness and resistance. The pain may be all over the abdomen in the beginning, but usually locates itself in the region of the appendix, which, in the great majority of cases, is somewhere near the McBurney point. It has been found by us up, under and attached to the gall bladder, in the median line just below the umbilicus, and in the left inguinal region. The character of the pain varies from a slight "colicky sensation" to a steady boring pain, or it may be paroxysmal, due to distention with gas. Sometimes the pain may be comparatively slight, even in very bad cases. This pain is to be differentiated from gallstone pain by its location and the tenderness of the appendix, which goes with the pain, but when this is located under or near the gall bladder the differential diagnosis is not so easy; but with this pain often goes the symptom of vomiting, which helps us out.

The vomiting in appendicitis is simply emptying the stomach of its contents, and usually ceases as soon as the stomach is empty, and the pain continues while the emesis of gallstone colic is usually bile, and the pain ceases when the vomiting is over and the spasm relaxes. The emesis of ulcer of the stomach comes a certain length of time after food is ingested, is usually very sour—acid—and not accompanied by much food or bile. The pain and vomiting of gallstone colic are usually relieved by a small hypodermic of morphin, while that of a local peritonitis, due to appendicitis, persists after the effects of the morphin have worn off.

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* Read at the fifty-ninth annual meeting of the Illinois State Medical Society, Quincy, May 10, 1900.

Tenderness is always located over the appendix or appendiceal abscess, and, as it is in the great majority of cases located in the right side, at or near McBurney's point, it is easy to connect it with the appendix. It is sometimes confused with a twisted Fallopian tube, but these are more movable and can usually be felt through the vagina or rectum. An appendiceal abscess has been diagnosed as stone in the right ureter, but a cystoscope in the bladder and a catheter in the right ureter, together with *x*-ray picture, will clear the diagnosis.

Empyema of the gall bladder has been mistaken for an appendiceal abscess. In these cases the gall bladder may be greatly distended, reaching to or below McBurney's point, and the whole right side of the abdomen be very tender and rigid. In these cases the diagnosis between an appendiceal abscess and an empyema of the gall bladder situated rather high is extremely difficult. A displaced right kidney, with hydronephrosis, is at times taken for an appendiceal abscess, but the kidney can usually be pushed upward, and here again the ureteral catheter will complete the diagnosis. Tumors of the cecum or ascending colon are sometimes taken for an abscess of this region. They are many times nodular, which is not true of the abscess. They are sometimes movable, which is also not true of the abscess. But the surgeon who essays to open an appendiceal abscess must be an infallible diagnostician, or be able to do the most radical resection of a tumor in this region, if he expects to be just to his patients.

Resistance is always to be felt, and the greater the degree of peritonitis the greater the resistance to the touch. If the appendix has ruptured or perforated and the peritonitis is, or becoming, general, the resistance is about the same over all parts of the abdomen. If it is walled off and localized, the resistance or splinting of the parts is simply over the abscess.

The only sane treatment is removal of the cause, and the sooner this is done the better the patient's chance for a speedy recovery. I have never been sorry on account of removing one too early, but have often been sorry when I have waited. If the patient has had cathartics and food, gastric lavage, several times repeated, suggested by Dr. A. J. Ochsner, is essential before the patient is anesthetized. Here is when prophylactic treatment is of the most value to the patient. An early diagnosis with the appropriate treatment will save much suffering, many lives and much time in bed. Too much stress can not be laid in the prohibition of food and cathartics in all these cases, as has been so ably pointed out in a recent paper on "Prevention and Inhibition of General Suppurative Peritonitis," by Dr. A. J. Ochsner.[1]

The right rectus incision, of sufficient length to give plenty of working room, we have found to be much the best in the majority of cases. This incision can be lengthened at will, if necessary, without danger of ventral hernia. It allows plenty of room to get in one side of the abscess cavity, and if the surrounding viscera are walled off and packed away from the infection with normal salt laparotomy pads before opening the abscess the protecting omentum can then be peeled away from the appendix, the cavity drained of pus, the appendix removed, and the cavity drained

1. Ochsner, A. J.: The Prevention and Inhibition of Diffuse Suppurative Peritonitis, ILLINOIS MEDICAL JOURNAL, May, 1909, p. 517.

through a stab wound, the protecting omentum sutured back in place after the gauze packing has been removed, the wound closed with catgut and horsehair, and the whole thing is done without affecting any other part of the abdominal contents. If a McBurney incision is made instead of the right rectus, all is well, providing you find all as expected, but if more room is wanted it is much harder to obtain without destroying muscular tissue, and greatly increasing the chances of a subsequent ventral hernia. The edges of the abdominal incision should be carefully covered with gauze pads, wet with normal salt solution, to prevent soiling with infectious material, as the abdominal viscera care for much infection which the wound through the abdominal wall will not stand.

Treatment of the appendix stump should always be: Ligature of the meso-appendix with chromic catgut, with purse-string around the stump of same material. The stump is then invaginated without being treated with carbolic acid or alcohol, and the stump of the meso-appendix sutured over the invaginated appendix stump. If linen is used for the purse-string, it should be confined to those cases where the infection is still within the appendix; otherwise a fistulous tract is likely to remain until the linen or silk has come away.

When a very large walled-off abscess is encountered, it may be best to simply open and drain, as perchance the appendix has entirely sloughed off and will flow out with the pus, as happened in one of our cases. Again, if the abscess is larger and the patient in poor condition, simple drainage may be better than to try and remove an appendix which is buried in adhesions. With these exceptions it is much better to remove the cause of the trouble at once.

In case the pus is not walled off and is free in the peritoneal cavity, first remove the appendix, with very slight packing away, and then place two drains, one in the pelvis, which will be found filled with pus in these cases, and the other to the appendiceal stump. This should all be done with practically no manipulation of abdominal viscera. If the viscera is handled in these cases of general suppurative peritonitis even very slightly, the scale may be turned from one with some hopes to one of absolute hopelessness. In all of these cases the patient's subsequent discomfort is in exact proportion to the handling of the gut.

In all cases, and especially those with pus in the free peritoneal cavity, adhesions should be disturbed as little as possible. Under no conditions should the abdominal cavity be flushed with any liquid. The pus may be soaked up with normal salt gauze sponges or laparotomy pads, if the utmost gentleness is used, and it can be done without extra handling of the viscera; otherwise it should be allowed to remain.

Closure of the wound should be done with one continuous chromic catgut suture, first through the peritoneum, then muscle and fascia. The skin is closed with horsehair. If the drains are placed through a stab wound, the original incision is closed tight. When no drainage is used, the wound is dressed dry. If drainage is used, the primary dressing is moist boric gauze. These moist dressings are continued in all the bad cases, where a large amount of drainage is desired, from one to five days, when they are superseded by dry dressings. The patient is placed in the

Fowler position, if there is much pus in the free peritoneal cavity, or if pockets of pus are found in the pelvis; otherwise the patient is kept on the right side.

If a well-marked case of general suppurative peritonitis has developed, there is no better treatment than that so ably presented to us by our Chairman[2] at our last annual meeting.

DISCUSSION ON PAPERS OF DRS. COLLINS AND GREEN.

Dr. A. J. Ochsner, of Chicago, was asked to open the discussion on these papers. He said: The conclusions which Dr. Collins has presented cover the subject. The most important point in the surgical treatment of appendicitis is the diagnosis. As Dr. Collins has pointed out, it is inexcusable to leave a patient, who has an acute intra-abdominal condition, without a diagnosis for twenty-four hours; to give him something for the pain, and then try to make the diagnosis the next day. I believe this is the primary cause of the still too high mortality in appendicitis. If the patient receives a careful physical examination at once this is practically certain to result in a positive diagnosis, provided there is an acute appendicitis present. If this is not possible, then Dr. Collins' plan should be followed. Nothing should ever be given that may disturb or render the diagnosis more difficult in an hour or two. He says that opiates should never be given; in fact, nothing but a placebo should be given until the diagnosis is made, and I would say, opium should never be given to any patient suffering from any intra-abdominal condition until the diagnosis has been made and until gastric lavage has been resorted to. If the diagnosis has been made, then treatment should be instituted, but if that treatment should consist in the giving of opium the contents of the stomach should first be removed by gastric lavage in order that the treatment does not furnish the conditions favorable for the absorption of septic material from the alimentary canal. I believe if this plan is followed, then the second condition Dr. Collins has pointed out will be possible. Then, these appendices can be removed with perfect safety before the infection has passed beyond the appendix itself. This treatment will prevent all of the complications of appendicitis. Appendicitis itself, so long as the infection is in the appendix, gives practically no mortality. The conditions which result after the infection has passed from the appendix are the ones that give rise to the mortality in appendicitis. Supposing, however, for some reason that the patient does not have an opportunity of having a careful physical examination made before the infection has passed beyond the appendix, this will result in a separate group of cases which we may classify as gangrenous and suppurative appendicitis, with peritonitis, the infection having extended beyond the appendix. In mild cases this further condition may never occur. A patient may have appendicitis, pass through it, and get well from it, without ever having this secondary condition. But in those cases of appendicitis in which the infection has actually passed beyond the appendix, and in which Dr. Collins advises the treatment that I have been advocating so much in the last eight or nine years, if this plan is actually carried out it will be followed by success, but unless it is actually carried out, it does not and cannot succeed. Our observations show that a very slight amount of food or a slight amount of cathartics given by mouth, is exceedingly harmful. We have demonstrated positively that one tenth of a grain of calomel may increase the leucocytes from one thousand to three thousand, and when repeated two or three times, frequently the increase in these cases is as much as five thousand beyond what they were before. A little broth, or a little food given by mouth, by causing a slight amount of peristalsis, will carry the infectious material from its localized point to a point where it can be absorbed by the lymphatics and immediately the patient has a severe septic condition. What will this treatment accomplish if, in the first place, gastric lavage is employed, so that there is

2. Eisendrath, Daniel: ILLINOIS MEDICAL JOURNAL, October, 1908.

nothing further to go through the pylorus into the small intestine? In the second place, neither cathartics nor food are introduced into the alimentary canal? If, in the third place, no large enemata are given, and if, in the fourth place, the method introduced by Dr. Murphy of continuous proctoclysis is employed, what will this do? It will make it possible in these cases of gangrenous and suppurating appendicitis, in which the infection has already passed beyond the appendix, to reduce the mortality to less than two per cent. How will it do it? It will do it, in the first place, by furnishing conditions for absorption in the peritoneal cavity which are most excellent, an opportunity to get rid of the infectious material by absorption. It will furnish these conditions and give the blood an opportunity to produce antitoxins. We have further the favorable conditions furnished by the omentum, the cecum, the abdominal wall, the pelvic peritoneum and by the position which Dr. Collins has recommended. All of these conditions will serve to circumscribe the infection. I have employed this method for sixteen years, and have had the opportunity of demonstrating in an enormous number of cases that these conditions will occur.

In regard to those cases in which Dr. Collins drains, but does not remove the appendix and in the cases in which we are not permitted to operate, we practically force the patient to live on liquids until the appendix is removed. It is strange how many of them, when they have some little pains later on which remind them of the troubles they had before, can be coaxed into having their appendices removed when it is perfectly safe to have this done.

Dr. Christopher Graham, of Rochester, Minn.:—I will speak briefly on how these cases of appendicitis are handled, and then attempt to give a few points in the differential diagnosis of perforating ulcer of the stomach, gall-stones and appendicitis. I believe when a patient presents himself early with appendicitis the appendix should, as a rule, be removed immediately and that is the practice at St. Mary's Hospital. There is another factor for the general practitioner to consider. We have in this country a good supply of surgeons. There are two classes, first, surgeons that are safe and sound, to whom we can turn our patients, and another class that call themselves surgeons. Now, if the practitioner is so situated that his patients with appendicitis can be taken, as soon as a diagnosis is made, to a Deaver, Murphy or Ochsner, or to one of the thousand and one surgeons in this country, this practitioner would feel safe and could rely on the individual surgeon's judgment and accept his advice as to what time the operation would be most safely undertaken. This matter of judgment comes through experience and experience only, and it is this judgment that should decide the time of operation, whether the patient is seen early or late. The regret is that so large a number of sufferers cannot have the services of experienced surgeons. To those who will or must seek surgical relief at the hands of the unskilled or enthusiastic learner, there is but one avenue of escape from real slaughter, and that is the unmodified Ochsner treatment with operation during the interval. A bungler at this time, if sane, will not sacrifice so many lives before he has learned the danger of his technique, or has learned a few of the rudiments of surgery. When our patient falls into the hands of an experienced surgeon, his safety depends more upon the judgment as to the proper time for operation than on technique. After forty-eight hours most patients are considered safe to operate upon, even upon the third, fourth or other day of attack, though a few are carried along after the second day. Again a patient may be seen within thirty-six hours and yet be considered within the danger limit and carried over. There can be no hard and fast rule laid down. To say one should operate only during the first forty-eight or fifty hours and then wait for the interval is not exact teaching. On the other hand to operate as soon as the diagnosis is made, whether early or late, may carry grave danger. Of the two teachings when widely applied to the profession, the former has much the advantage.

In making a differential diagnosis in ulcer of the stomach, gall-stones and appendicitis, we must consider the primary symptoms of each trouble. In ulcer of the stomach we get the history of repeated prolonged attacks, each

day of attack running the same course—pain, gas, sour and vomiting two to four hours after meals, of relief by food, drinks, alkali, vomiting or irrigation, then a period of health. When perforation has taken place the pain and seat of pain may be quite like severe gall stone, infected ducts or perforation, or quite like perforation of the appendix. The early history will aid greatly in reaching a correct diagnosis.

In gall-stones we get the short, irregular, decided attacks of so-called indigestion, or the typical attacks of sudden, severe epigastric pain, radiating to the right arch and back, upward pressure and almost bursting feel, vomiting and after a shorter or longer period of minutes or hours the same sudden relief from pain and almost normal health. When complication, such as abscess, duct obstruction or perforation, has appeared, one will need the early clear-cut history to get at the real present condition.

In appendicitis one gets rather a prolonged history of trouble, irregular symptoms of indigestion, not so much disturbance of nutrition as in ulcer, and not the food relief or regularity of symptoms. If general abdominal pain or lower abdominal pain is developed in the history of preceding attacks, one can safely exclude gall-stones and ulcer when confronted with the severe condition of perforated appendix. If one gets an extremely acute pain that is not controlled by morphin you are apt to be facing infection outside of the gall-bladder, a ruptured appendix or a perforating ulcer. In a great many cases of perforating duodenal ulcer, the pain is situated low down and you may call it appendicitis if hasty in your diagnosis. Later the pain will creep up and you will get tenderness in the duodenal area. The early history is certainly useful in these cases for a differential diagnosis. I believe that, if you have a competent surgeon at hand to whom you can refer the patient, it is not right to wait to make a differential diagnosis if the patient has intense abdominal pain, because if it is a perforating gastric or duodenal ulcer the case needs immediate operation. If it is a perforating appendix or ruptured gall-bladder the same is true. The physician should make a surgical diagnosis and then hurry the patient to a safe operator.

Dr. William Fuller, of Chicago:—In general I agree with much that Dr. Collins has said about appendicitis, but would add a word regarding the administration of opiates for the relief of agonizing pains sometimes met with in this condition.

I feel sure that the surgeon who always advises against the relief of pain in appendicitis by giving morphin, has never suffered a genuine attack himself, nor has he seen much of this disease as the general practitioner sees it. It may be easy enough to withhold this kind of relief in hospital cases, where diagnostic measures may be quickly applied, and which may be followed at once by the operation, but in family practice, where, as a rule, the severest cases are met with, the demand often for relief is too great and too urgent for any humane or sensible physician to resist.

That morphin in a mild case might obscure the diagnosis is probably true, but that large doses, even when repeated, will not do so in severe and typical cases is true also as thousands of physicians will attest. Recently I operated on a patient for appendicitis whose pain was so sudden and severe, that he was not able to rise from the floor upon which he had fallen; and although he had received three or four doses of morphin, which had greatly relieved his suffering, this treatment had in no way clouded the symptoms, and the diagnosis could not have been, without the opiate, any more easily and quickly made.

Sudden attacks of right-sided abdominal pain in a previously healthy individual, followed by localized tenderness over the appendix, nausea and vomiting, with or without elevation of the temperature, and an increasing pulse rate, indicate so clearly the proper line of treatment, it seems incredible that a dose or two of morphin could, under these circumstances, mislead any experienced surgeon.

Dr. Frank Billings, of Chicago:—The question of diagnosis is important. The surgeon is the one to decide when to operate after the diagnosis is made.

There is one phase of appendicitis which is seen by medical men alone. General conditions are produced by chronic appendicitis, and I thoroughly agree with Dr. Graham that such an appendix interferes with digestion and the constant absorption due to the disturbed metabolism produces general changes of a degenerative nature. Hence a reason for removing the local infecting point and saving the patient from the chronic changes. I recall the case of a patient, aged 55, who had chronic appendicitis with severe angina pectoris, who was greatly improved and had no further attacks after the removal of the appendix. There is more than an immediate reason for the removal of the appendix.

Dr. John B. Deaver, of Philadelphia, was asked to discuss the papers. He said: I had hoped the chairman would not call on me to discuss this subject. I see so much of this disease and talk about it so frequently that I hesitate to say anything at this time; but it seems *apropos* in a building of this kind (referring to the church in which the meeting is being held), where the gospel of Christianity is so thoroughly promulgated, to preach the gospel of the scalpel. I was sorry my friend Dr. Graham was so lukewarm in his advocacy of early operation for appendicitis, for if there is anything I believe in it is the early application of the scalpel in the treatment of appendicitis. We should no longer rely on opium and salts; they should be relegated to the past. They have no place in the modern treatment of appendicitis, and I still give credit to that great surgeon (Charles McBurney) who, a number of years ago, came to Philadelphia and opened the discussion on a paper which I read (I think it was fifteen or eighteen years ago), in which he advocated but one treatment for appendicitis—the knife, the knife, and I can only reiterate the statements of that magnificent man. He was a pathfinder.

This subject is entirely too extensive to permit of full discussion, so I will only speak of one or two points, and I am tempted to do so after the remarks of our distinguished friend, Dr. Billings, one of our best known and best teachers.

There is one point I want to refer to. We have been speaking of twenty-four hours and thirty-six hours elapsing before operation. I am preparing a paper on peritonitis, and one of my ex-house surgeons of the German Hospital, who has collected the statistics for this paper, has gone over my records. He has secured some consecutive cases of peritonitis from appendicitis, dating from the onset of perforation of the appendix, none having been operated on in less than forty hours and some forty-eight hours after onset of the peritonitis with but one death. This shows the mightiness of the aseptic scalpel if administered at the opportune time. We should not stand here and talk about any treatment which will tide the patient over. The patient should not be allowed to reach that stage.

There is much more I could say on the subject, but it has been so well said by others this morning that I hesitate to consume further time. (Cries of "Go on! Go on!") I urge you not to wait for the interval. If I am called to see cases of appendicitis I cut them, and I cut them quick, and they get well quick. I do not mean, mark you, a patient who has been sick eight or ten days. That is a different type of case. I am speaking of the cases seen within forty-eight or fifty hours.

The Doctor spoke of temperature. There are two instruments I do not carry, the hypodermic syringe and the clinical thermometer. If I were practicing medicine, properly speaking, I would carry a clinical thermometer perhaps. So far as the practical side of it is concerned, I would rather operate on a patient with appendicitis with temperature than on an appendicitis case without temperature, that is, a temperature below normal or abnormal. So I do not think the temperature cuts any figure, with but few exceptions.

As to the question of salts, the patients with appendicitis I see die from too much pharmacy. They die from purgation, in the majority of instances, and this point was well brought out by Dr. Ochsner in the treatment of rest of the alimentary canal. I am free to confess that there was a time when I believed purgation was proper treatment, but we learn from experience. I now believe that purgation is dangerous. I also believe that the administration of opium is dangerous. After the diagnosis is made there is no time to give opium. That is the

time to cut them, and I want to promulgate this doctrine: Early diagnosis, early operation. In the majority of instances it is no trouble to make a diagnosis of appendicitis. An infant or child often makes its own diagnosis of appendicitis. A child will not allow a doctor to touch the right side, and yet there is much said about the difficulty in making the diagnosis of this disease. I am speaking now of the majority of cases. The rule which works best in the majority of cases is the best rule. There are a few cases where the diagnosis is difficult, but they are the exceptions.

As to the question of peritonitis, it is a broad one. I endorse all that has been said relative to the treatment of peritonitis. I will not operate on a case of appendicitis that has been sick three or four days, with highly distended abdomen, with inability to locate the mass in the presence of great distention; but in the presence of a mass situated low down in the right I have operated on many such cases and have had the pleasure of seeing them recover. I endorse, too, what has been said with reference to the inadvisability of removing the appendix in all cases of localized abscess formation. To follow that as a general practice would be hazardous. My experience tallies with the gentlemen who have spoken, that in quite a percentage of these cases the best line of treatment is that which has been advocated. When I operate on these patients and the appendix is right under the eye, I take it out; but I do not make a search for it, fearing I will break down barriers, and far more damage will result as a consequence.

I am very glad to have had the opportunity of saying a few words on these papers and on this old but interesting subject.

Dr. Carl E. Black, of Jacksonville:—I did not expect to say anything on this subject, and there is very little left for me to say. I am very glad indeed we have heard Dr. Deaver and the other gentlemen give us this able discussion. It seems to me, in the diagnosis of appendicitis, there is still considerable timidity existing among general practitioners, particularly those in the country. We should strive to overcome this timidity. It is very essential to make a prompt and positive diagnosis, and it is a mistake to wait until to-morrow to find out what is the matter with the patient or to see what the symptoms will be, when we ought to know the nature of the case at once if possible. In doubtful cases we should not wait more than three or four hours before seeing the patients again, and we should abandon giving something which may obscure the diagnosis.

Recently I was making up the annual report of our hospital and found that we had had a hundred and fourteen cases of appendicitis. Of this number, sixteen were pus cases, walled-off cases. Of the remaining number, there were eight cases in which the pus was located at some distance from the appendix, or where there was extension of the disease beyond the immediate region of the appendix. Three of the eight cases died; all the others recovered. Death occurred only in those cases in which the disease had been allowed to go on so long that the pus had extended beyond the region of the apendix, causing general infection of the peritoneum. It seems to me the whole matter depends on early and prompt diagnosis and early operation, and we should strive to influence the general practitioner in overcoming this timidity in declaring a positive diagnosis.

Dr. M. L. Harris, of Chicago:—One of the most pernicious practices which is prevalent to-day is the administration of cathartics in cases of appendicitis. I think a patient, with a pain in the belly, should never, under any circumstances, be given a cathartic of any kind or description until it is absolutely certain that that patient is not suffering from appendicitis or from any other condition which has produced or may produce a peritonitis.

Another pernicious teaching which has been promulgated is an attempt to divide appendicitis cases into those of so many hours and so many days. There is no condition of the abdomen which is so variable in its manifestations as that of appendicitis. I have seen patients with appendicitis die within twelve hours from the first symptom. On the other hand, a patient may go from ten to twelve days without serious symptoms being present. There is no such thing, therefore, as dividing cases of appendicitis into those of twenty-four hours, thirty-six hours and three days or four days.

There is no trouble in telling what to do in a case that has been diagnosed as appendicitis. When the diagnosis is unmistakable we should operate. The question of abscess formation does not come into consideration here. If you have an acute appendicitis to deal with, get out the appendix if you can before the infection has extended beyond the appendix. If you cannot get it out early do so just as soon afterwards as you have opportunity and the patient's condition permits. If we allow the appendix to remain the infection may extend to the veins and produce thrombosis, pylephlebitis, etc., or it may extend to the retroperitoneal connective tissue with the formation of secondary abscesses. These are the cases that die. Therefore, I cannot agree with my friend, Dr. Collins, not to remove the appendix at the operation. Formerly I did not remove it in large abscess cases; I opened the abscesses and drained them, but not only did I have to operate secondarily many times but the patients occasionally went on with a slow infection which extended to the veins, producing thrombosis, infection of the liver, etc., and eventually died. If I had removed their appendices at the first operation they might not have died. In spite of the advice of my friend, Dr. Deaver, I remove the appendix in every case in which I can find it, and I always look for it. One great trouble is in making the incision. The rule of making the incision to the inner side of the appendix is pernicious and harmful. It leads through a region of the abdomen surrounded by small intestine which we do not wish to invade, for when we open an abscess the area of the small intestine is exposed to infection. I open into the abscess mass from the outer side, following the wall of the abdomen; the omentum and small intestines are to the inner side and are never disturbed, and we can find the appendix without getting into this region of danger. I have found that my mortality has not been increased by removing the appendix in every case at the first operation. The death rate comes from going in on the inner side and thus opening this region of the peritoneum and omentum to infection which you cannot prevent in many cases. I consider the rectus incision a bad one, and the muscle-splitting incision, keeping to the outer side, is sufficient for all cases.

Many of the patients with the fulminating form of appendicitis, which was formerly looked upon as being fatal, now get well. We have had too many of them to be mistaken. These cases should be operated on immediately, the appendix removed, the cavity drained, continuous irrigation through the rectum instituted, and this may all be done within five or ten minutes under a little gas anesthesia, and the patient will get well.

SUBSEROUS APPENDECTOMY *

E. M. Sala, M.D.

ROCK ISLAND, ILL.

Subserous appendectomy is the removal of all the appendix except its serous coat and thus avoiding the disturbance of adhesions of the appendix to other viscera. While the methods of dealing with most all forms of adherent appendicitis have been thoroughly thrashed out by various surgical societies and by printed works on appendicitis, yet I have been unable to find but slight reference to the method I wish to present to-day.

After a careful search of the *Index Medicus* and its tracings in the medical library in Washington and a perusal of the works there on appendicitis I was unable to find mention of the method, except in two instances, and they were only applicable in a certain condition—that is,

* Read before the Western Surgical and Gynecological Association, at the Annual Meeting in Minneapolis, Dec. 29-30, 1908.

where the appendix could be outlined from base to tip, although covered by adhesions. In such a case, by an incision through its peritoneal covering along its entire length, the appendix could be readily shelled out. I was further unable to find any reported cases of this or the method in point, and yet I am quite sure that the surgeons, who are doing a great deal of work on the appendix, have removed the organ in the manner which I wish to relate.

Fig. 1.—Appendix completely covered by adhesions; base exposed by incision through serous coat.

Deaver's work on appendicitis, third edition, page 438, says: "Sometimes, either because it is subserous or because of adhesions, it is impossible to bring the tip of the appendix into the operative field. Under these circumstances it is often possible, after ligating and dividing the base of the appendix, to strip it out of its peritoneal coat as a finger is pulled out of a glove. By thus removing all but the serous covering the entire area of infection is taken away and the serous envelope can not cause a recurrence of the disease."

Kelly says, on pages 575 and 576 in his work on appendicitis, "When the whole appendix lies imbedded in strong, old adhesions, and can be removed only by digging it out of its bed, there is considerable risk of tearing adjacent structures or of exciting hemorrhage by rupturing one of the numerous small vessels, which, being situated in the midst of the matted tissues, are difficult to control. In all such cases it is a good plan to detach the base of the appendix, and, then catching the freed end with a pair of artery forceps, to lift it up and circumcise the organ just below the forceps, by cutting through the peritoneal and on to the muscular coats. A longitudinal incision, including only these coats, is then carried down to the dorsum of the appendix as far as it is visible,

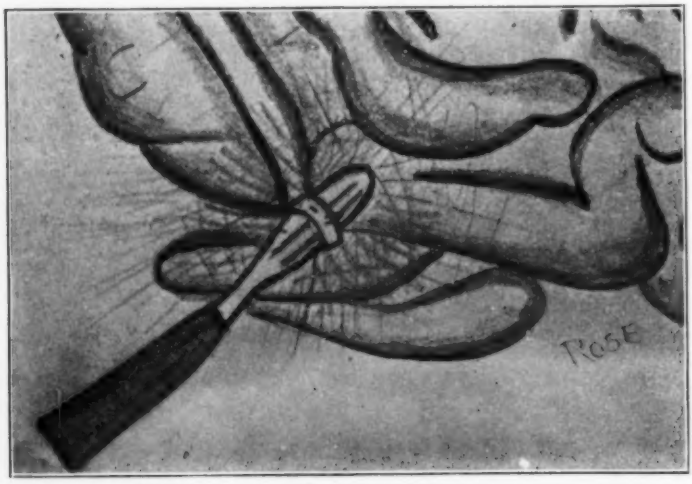

Fig. 2.—Kocher's director supporting base of appendix, except serous coat, ready for amputation.

after which the appendix can be stripped out of its bed by traction in the direction of the tip, or it can, sometimes, be delivered by a straight pull."

W. J. Walsham, M.B., Aberd., F.R.C.S. Eng., in a treatise on appendicitis, 1901, page 25, advises, "That when appendix is so adherent to important structures that the whole of it can not be removed, it should be divided near its cecal attachment, the proximal end closed in the usual manner and as much of the organ removed as safety will permit, either by dissection or by shelling out from the peritoneal cavity."

Bull and Von Bergman, page 368, say: "If the appendix is so surrounded by adherent intestinal coil that their injury is likely to follow attempts at its removal the operation had better be given up. Sometimes the appendix is so closely adherent to the wall of the cecum that it appears almost a part of it and can not, with safety, be separated from it. In such a case the appendix may be split lengthwise, and its mucous membrane removed and ligated at its junction with the cecum

and the wound in the appendix sutured. This procedure is very simple and avoids the severe hemorrhage which frequently follows rupture of extensive adhesions."

Murphy, under head of The Intermediate Operation, in his chapter on appendicitis (Keen's new work on surgery), says: "The appendix is located by the meso-ileum or tenia coli route described under the same heading. When found it is often very difficult to free it from the intestinal wall, the iliac vessels, the parietal peritoneum, the gall-bladder or the subphrenic tissues. When the mesentery is short and the appendix embedded in any of these structures the best plan is to divide the peritoneal and fibrous coats of the appendix from base to tip and shell out

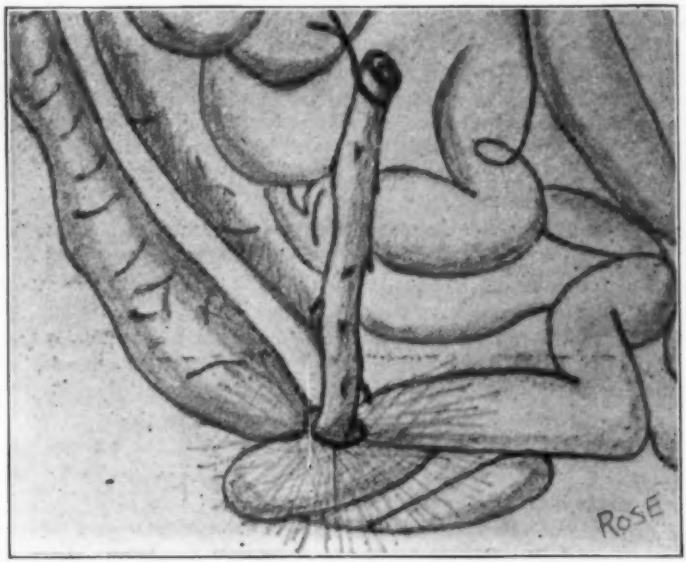

Fig. 3.—Appendix being pulled out of a circular incision of the serous coat near its base.

the mucosa. There is no hemorrhage and ligations are unnecessary. The peritoneal and fibrous layers are closed with a whip stitch of catgut, the appendix amputated, and the stump embedded, as described under technics of early operation."

The two descriptions, describing removal of mucosa, are in reality a different branch of the subject, but, as they offer another solution of the problem of exposed adherent appendicitis and as they were the only methods offered in these works, I have taken the liberty of quoting them. While much more has, no doubt, been written regarding subserous appendectomy and a great deal more been enacted by individual operators (although not written up), it occurred to me that an article on the subject, with report of cases, might be of interest.

The method I wish to speak about deals with the appendix, which is not only covered by adhesions, but is completely out of sight and can not be palpated. Any method which locates where the base of appendix should be, is adopted. Usually one of the three white lines on the cecum is traced to its termination in the base of the appendix. The base having been determined, a circular incision through the adhesions and the peritoneal covering is made. Possibly only half of this incision can be carried out—that is, the part in front. A Kocher's director or other suitable instrument is pressed through this incision under the appendix anterior to the posterior peritoneal or serous covering. The director then supports all of the base of the appendix, except its serous covering. The peritoneal covering is then retracted on both sides of the director, similar to the way in which it is stripped back in the cuff operation. The appendix is then doubly ligated, or ligated next to the cecum and clamped distally. The cecal stump is inverted by reversed mattress or purse string, or by any other manner in which the operator chooses to dispose of it. The freed end of the appendix, which includes all of the appendix except its serous coat, is grasped with forceps and by a gentle pull is shelled out of its serous coat, similar to the manner in which you would uncoil a section of intussuscepted bowel, the serous coat remaining attached to adjacent structures. Should pus exist, or a perforation be present, there is a possibility that one might not succeed in shelling out all of the appendix. The part remaining is taken care of by Nature and proper drainage. A small rubber tube, covered with gauze and rubber tissue, corresponding in caliber to the stripped appendix, is carried into the cavity which was formerly occupied by the appendix and is brought out through a stab wound or through the original incision, the tube being fastened to the serous coat by a number 1 catgut to prevent its being displaced too soon.

Should a fistula exist and the drain remain in place it would seem that it would be a very favorable kind to heal on account of its being lined most of the way by serous membrane. This certainly avoids breaking up adhesions and, as Binnie so beautifully says, "One must remember a cardinal rule in abdominal surgery—viz.: Sacrifice part of what is being removed if non-malignant rather than injure a viscus."

The first of the cases I wish to report was referred to me by Dr. H.

The patient was a Greek, aged 38 years. There was nothing in his family or previous personal history of interest. His attack of appendicitis was of three weeks' duration. Operation, Oct. 22, 1907, at St. Anthony's Hospital. The appendix was quite difficult to find on account of extensive adhesions in all directions, but was finally located by anatomical bearings such as iliocecal junction and termination of white bands, this being the point at which the appendix must terminate from the cecum. What afterwards proved to be the base of the appendix was exposed by incision, penetrating adhesions and serous coat only. A white cord presented, which at first appeared to be the right ureter on account of its location directly over the course of the ureter. A gentle pull on this cord caused it to give way and we found that all the appendix except the very tip, had shelled out of its peritoneal covering. The organ had herniated into the iliocecal fossa. The appendix was clamped and ligated and the stump treated in the usual manner. The appendix, which was three inches long, was removed.

The tip was left and a rubber tube, covered with gauze and rubber tissue, carried into the cavity in the serous coat down to the detached tip. This was left in place for several days and repacked with gauze every other day until the sinus was closed by Nature. The wound was closed by three layers of iodized catgut sutures, skin stitch being subcuticular. The patient made an uneventful recovery.

CASE 2.—M. W., aged 13 years, referred by Dr. S. The patient, who had suffereed pain at McBurney's point for two weeks, was operated on at St. Anthony's Hospital, Jan. 18, 1908. There were numerous adhesions in all directions, the appendix was glued to the bowel and embedded in the bottom of the abscess cavity. It seemed that a fecal fistula would surely result if the appendix were removed in the usual manner. An incision was therefore made through the serous coat at the base of the appendix and an instrument carried under the appendix, holding up all but the serous coat. The organ was clamped and ligated, the stump turned into the cecum and the balance of the appendix excepting the serous coat was shelled out of its serous covering. A cigarette drain was carried into the serous cavity and a double coffer-dam placed in the wound after stitching the peritoneum to the skin on either side of the wound. The patient was put to bed in Fowler's position and recovery was uninterrupted. In this case the appendix was already perforated and yet the entire organ was shelled out of its serous coat.

CASE 3.—Mrs. M. B., aged 29 years, referred by Dr. B. The patient had suffered pain in the upper abdomen during the past two years. Food distressed her very much. I was called to see her April 26, 1908. She had been having pain for four days, the first twenty-four hours in the upper abdomen, which was located at McBurney's point on the second day. The patient entered Moline Hospital and was operated on April 27. I found an abscessed appendix which was completely covered by adherent bowel and other adhesions. The appendix was perforated. The peritoneal coat was incised at the base, the appendix ligated and cut and the proximal end folded into the cecum by reversed mattress suture. The opposite end was grasped by forceps and shelled out of its peritoneal covering. Fortunately the whole appendix (excepting the serous coat) was shelled out regardless of perforation. A cigarette drain was carried into the cavity left by the removal of the appendix; also a separate drain was carried down to the stump ot the appendix. The wound was closed by three layers of catgut sutures.

The patient made an uninterrupted recovery.

CASE 4.—Mrs. B. A. S., aged 30 years; case in my own practice. The patient was operated on for removal of right ovarian cyst. The appendix was removed incidentally. Appendix was found to be herniated into the ileocecal fossa. The base of appendix was located and the peritoneal coat incised, the appendix ligated and treated as cases one, two and three. The appendix was quite easily shelled out of its peritoneal covering and was found to be six and one-half inches in length. A cigarette drain was inserted in the cavity and brought out through a stab wound, external to our incision. Recovery was perfect.

While four cases are hardly sufficient upon which to base a positive theorem, yet I am quite sure that the method has a permanent place in surgery and is the operation of choice in certain forms of adherent appendix.

CONCLUSIONS.

1. The vermiform appendix may be shelled out of its peritoneal covering or serous coat.

2. The remaining serous coat can not cause a recurrence.

3. This method of dealing with an appendix which is glued to other important structures avoids the disagreeable sequences of loosening up strong adhesions and in many cases may preclude subsequent operations. which are always embarrassing to the operator and a continued misfortune to the patient.

WHEN SHALL WE ADVISE OPERATION FOR THE FIBROMATA AND MYOMATA OF THE UTERUS.*

D. C. STREMMEL, M.D.

MACOMB, ILL.

When a patient comes to us for examination and we find a tumor of the uterus we advise that patient to the best of our knowledge and ability what is the best for her to do. In giving this advice there are several important facts to take into consideration.

1. If she comes early before the tumor is large or any special symptoms develop it is impossible from the physical examination and clinical history to say what the histological structure of that tumor is; whether it is a simple fibroma or a simple myoma, a fibromyoma or a myofibroma, or any of the other combination forms, such as the adenofibromata, the fibrolipomata, the papillomata, the cystic fibroids or the metaplastic forms.

2. On account of the many complex and variable conditions attending the growth of these different forms of tumor we can not even approximately prognosticate their life history. We do not know what their future behavior is going to be.

3. These tumors are foreign bodies and have no physiological function whatever. That they are a menace to the health and often to the life of the patient, and later frequently lead to chronic invalidism and cause death must be admitted. Retrograde metamorphosis and metabolic changes producing waste products take place in these tumors the same as in the other tissues. The often serious effect of these products on the other organs should not be lost sight of.

4. The longer these tumors exist as a rule the more liable they are to undergo degenerative changes. It is not our purpose here to discuss the various degenerations and complications that take place in these cases because that is a matter of common current literature. Clinical experience teaches every one who has had much experience that the great majority of fibroids do undergo degenerative changes and are complicated in various ways in time. Within the last five years extensive research has been made along these lines. Statistics have been compiled in series of thousands of cases showing that 60 to 75 per cent. of these tumors ultimately cause serious results. One of the most comprehensive papers that I have found on this subject was written by Dr. Charles P. Noble of Philadelphia and published in *The Journal of the American Medical Association*, Dec. 8, 15 and 22, 1906. He collected in series 2,274 cases and said that at least 60 per cent. of all cases showed degeneration or complications. He showed that 12 per cent. of these cases would have been fatal if operation had not been done. He showed that 1.4 per cent. underwent sarcomatous degeneration and from 2 per cent. to 3 per cent. carcinomatous degeneration, making about 4 per cent. of malignant de-

* Read at the Fifty-Ninth Annual Meeting of the Illinois Medical Society at Quincy, May 19, 1909.

generation alone, while the mortality, if done by a skillful surgeon, was only 3 per cent., even taking the late and seriously neglected cases into consideration. Other statistics show a higher percentage of complications, some lower. I believe the statistics above mentioned, so far as complications are concerned, are too low. I admit that my experience has been limited compared with many, but it has been such that I am compelled to maintain my present views. My first assistant, Dr. Holmes, and I have operated on 61 cases, everyone of which was complicated—4 had undergone carcinomatous degeneration, 1 sarcomatous, making 5 cases of malignant degeneration. The sarcomatous case died 3 months after operation from recurrence and one carcinomatous case died in 6 months from recurrence. In the great majority of our cases hemorrhage was a prominent symptom and was responsible for getting the patient's consent for operation. In ten cases the growths were very large and produced more or less pressure symptoms. Five were complicated with ovarian tumors. Four were the multiple fibromyomata in which we were able to remove the growth without removing the uterus. One was a large pedunculated fibromyoma weighing 19½ pounds. Ascites and edema of the lower extremities and abdominal wall were extreme. The patient had been tapped 13 times for dropsy, each tapping yielding from 6 to 7 gallons of fluid. When the incision was made 7 gallons of fluid escaped.

The omentum was plastered over a large portion of the tumor with adhesions in abundance. A myomectomy was done. The patient recovered and two years later gave birth to a child. This case and several others we have operated on are relics of the dark ages of surgery and diagnostic inability. We have never lost a case from operation, but we have had some very narrow escapes on account of undertaking cases away beyond the border line of safety. In view of what I have said, and in view of what I have learned by consulting the late literature on this subject, I am convinced that we should advise operation for these tumors of the uterus as soon as the diagnosis is made, even before degenerative changes or complications occur. The only exceptions I make are those cases that any surgeon of average ability would refuse on account of old age or a physical condition strictly contraindicating operation. These tumors have been the subject of more conservatism than tumors or pathological conditions anywhere else in the body.

The modern tendency of physicians as well as surgeons is to act in every other surgical condition before serious complications arise. Why not here? The only tenable reason for this is the possibility of a successful pregnancy in the presence of the tumor. Reliable statistics show that a very large percentage of patients with fibroid tumors are sterile, and in many of them where pregnancy does occur serious complications arise that may be fatal to both mother and child. If the real facts were known the probabilities are that many more fatalities occur from this cause than is generally supposed. Advising operation does not necessarily mean hysterectomy. Hysterectomy should be advised as a rule after the menopause, but before that time the operation of selection should be myomectomy whenever that is possible. The cases in which

myomectomy is impossible are very often sterile anyway and a hysterectomy should be done. The operation of myomectomy is by no means a simple operation—not nearly so simple as most of the hysterectomies. An important point is hemorrhage during and after operation. When the growths are large, according to the best authorities, drainage should be secured, and all dead spaces avoided by suturing the peritoneal covering to the base in such a way as to eliminate them. In one case I removed thirteen growths, varying in size from a large walnut to a hickory-nut. Six months later the patient married, and eighteen months later gave birth to a healthy child with no complications during labor. Myomectomy is sometimes followed by recurrence because it is not always possible to get every focus of new formation.

The mortality of these operations, if done early before complications arise, should be nil, unless some accident, such as thrombus or embolism, or the anesthetic, should cause death; but, if done late—even if done by the most skillful hands in surgery—the mortality must be much higher. Within the last few months I have asked a number of my colleagues in my neighboring cities, "When do you advise operations for these tumors?"

Dr. J. F. Percy of Galesburg said: "I always advise their removal, for the reason that no woman is really healthy that possesses one. The risk is slight in the early stages. If allowed to remain until degenerative changes or complications occur the mortality rate progressively increases, whether operated on or not, just in the degree that operation is delayed. Anything abnormal in the human body that has become pathological should be removed whenever it is possible to do so with a reasonable degree of safety."

Dr. George N. Kreider of Springfield said: "The more I see of these growths the more inclined I am to advise early operation." Dr. Glidden of Danville said: "Under ordinary circumstances I advise operation as soon as the diagnosis is made unless the patient is in an enfeebled condition contraindicating operation." Drs. Collins and Hanna of Peoria said: "Yes, these tumors should be advised operation early before the many and serious complications we so frequently meet occur." Dr. Carl Black of Jacksonville said: "I advise operation as soon as the diagnosis is made; of course, I except extreme and unreasonable cases."

Dr. Christy of Quincy and Drs. Mammon and Guthrie of Bloomington expressed themselves practically the same way. In answer to the question, "Do you advise operation for the fibromata and myomata of the uterus as soon as the diagnosis is made, even before degenerative changes or complications have taken place?" John Deaver of Philadelphia said, "Yes, I do."

Dr. J. B. Murphy of Chicago said: I advise the operation of myomectomy for practically all cases of fibroid in patients in the child-bearing zone, and hysterectomy in those beyond the child-bearing zone, except for the subserous fibroids. I rarely ever do a hysterectomy on a young woman for fibroma. The mortality of myomectomy is less, I think, than that of hysterectomy, although the myomectomy cases are not unlikely to have hematoma unless 24 or 48 hours drainage is used."

Dr. Howard Kelly of Baltimore said: "I never operate on fibroid uteri simply because the woman has a tumor. I operate when the tumor is large or larger than a five or six months' pregnancy. I recommend its removal for size. When it is fixed or when there are any complications, pain, fever, hemorrhage or lateral inflammatory disease I recommend operation. Any serious complication can be detected if the case is under observation, so that there is no need to operate on the smaller movable tumors, 'as soon as discovered.' In this way many are never operated upon. Myomectomy is the ideal procedure, but it is dangerous in inexperienced hands." Dr. A. H. Ferguson of Chicago said: "Yes, I advise early operation in those cases, hysterectomy after the menopause and myomectomy when possible before. Most of the leading surgeons quite generally agree on these points." Dr. Edward H. Ochsner of Chicago said: "It is a little difficult to answer your question categorically, because, after all, every case is a law unto itself. As a general proposition I would say yes; however, there must always be some exceptions. In a feeble old lady past the menopause with a small fibroid causing no symptoms I should not advise an operation, and thus there might be other exceptions to the general rule." Dr. Charles H. Mayo of Rochester said: "I advise operation for fibromata and myomata of the uterus as soon as the diagnosis is made if there are symptoms which are caused by the tumor. Sometimes a delay for two or three weeks may be indicated in the very bloodless. While it is true that many women have small fibromata of the uterus without symptoms, when such tumors are of themselves much larger than the uterus itself and the patient is 45 years of age, knowing that the tendency of such tumors to degenerate or produce malignancy in the uterus which will rapidly invade the tumors, I believe that far fewer lives would be sacrificed by an operation than to allow the tumors to remain after Nature is ready to eliminate the uterus from function. I feel that there is always a risk when the uterus itself is becoming atrophied and is compelled to take with it masses of tissue much larger than itself."

In conclusion I will say that the most serious cases I have met had been advised against operation before the growth was causing trouble. I have often felt that these cases should be operated on earlier, and, upon looking up the latest literature and consulting a number of other surgeons, the conviction is still more firmly established in my mind that these cases should be advised operation as soon as the diagnosis is made in every instance except in those cases in which no reasonable surgeon would advise operation.

DISCUSSION.

Dr. William Cuthbertson, of Chicago:—The indications for operation for fibroid tumor of the uterus, after it has been discovered, are not the same as when we have made a diagnosis of appendicitis. A great many women present themselves for examination for other pelvic troubles, and in the course of that examination we discover the presence of fibroid tumors, and unless these fibroids are sufficient to have caused predominating symptoms, such as pain, displacement of the uterus, or profuse hemorrhages, I do not think we are called upon to operate on them as soon as the diagnosis is made. Every practitioner of experience has had or has seen numbers of cases of comparatively young women who

have had their uteri studded with small fibroid tumors; yet they have not caused great pain or marked symptoms of any kind. The tumors have not been sufficient to cause displacement of the uterus, with accompanying constipation and disturbances of urination; consequently I think we are safe in letting these young women go on and keeping them under close observation.

As far as the pathology of these tumors is concerned, age has a great deal to do in determining the nature of the tumor. For instance, if a young woman, married or otherwise, twenty-six, twenty-seven or thirty years of age, presents herself for examination and we find a fibroid tumor of the uterus, we would not expect to find any great degree of malignancy in that tumor. As age advances the probability of malignancy must be considered. The investigations of Cullen show that sarcomatous degeneration in fibroids of the uterus occurs in less than 2 per cent. of the cases. The researches of Noble, of Philadelphia, quoted by Dr. Stremmel, show carcinomatous degeneration in a larger percentage of cases; but when we consider, on the other hand, the large proportion of cases of malignant disease of the uterus and of the cervix, which are ostensibly caused, according to Noble, by lacerations of the cervix and uterus; then, when we take into consideration the number of cervical tears which have gone on for years and have not produced malignant degeneration, we are perfectly safe in allowing many of these tumors of women, where the tumors are not of very large size, are not causing profuse hemorrhages and pain, or other disturbances, to go unoperated on until after the menopause. If we watch them afterwards, in a large number of instances they disappear and cause no further trouble. The time for operation depends upon the individual case, upon the amount of disturbance locally that is caused by the tumor, and also we have to consider the effect of the tumor on the patient's health and be guided by these considerations entirely.

Dr. Bertha Van Hoosen, of Chicago:—I have been much interested in Dr. Stremmel's paper, and very much encouraged, because I believe he has taken the position of what we would call the radical treatment of fibroid tumors of the uterus. I have never been able to understand why a tumor of the uterus should be looked upon any differently from a tumor of the breast. If a woman presented herself at my office with a tumor of the breast I would not advise electrical treatment; I would not apply glycerin and ichthyol, and I would feel guilty if I did nothing; but would tell her to have that small tumor removed at once, and a section put under the microscope for the purpose of determining whether it is malignant or benign. By that treatment we can catch in the early stages nearly all of the cases of carcinoma of the uterus. It does not do any harm to remove a small fibroid from the uterus or a small cyst from the breast. It is a simple operation, and we know exactly what we are doing. I believe the conditions in the pelvis are exactly the same. We talk much about how we would treat a fibroid or myoma of the uterus, and I think probably we all might agree as to how it should be treated, but I would have grave doubt if any surgeon said that he could make a positive diagnosis as to the malignancy or non-malignancy of any tumor in the pelvis. Last June one of my patients went to a very prominent surgeon because she had a small fibroid. He told her she had a small fibroid not much larger than the end of his thumb, and that if it troubled her at any time she should have something done. I saw her again. She was in Chicago away from the doctor whom she had first consulted. I saw her in January, and I told her she had a number of fibroid tumors. The whole mass of fibroids, perhaps, was as big as a child's head. I told her I thought she had better have them removed because of the pain she had. She had a leiomyosarcoma. I was unable to make the diagnosis when I took out the entire mass. The tumor was carefully examined, and the diagnosis was made by Dr. Wells, of the University of Chicago. These tumors are not very common. We know that these tumors of the uterus produce considerable irritation, but our statistics in regard to carcinomata are entirely changed where we have myoma in the uterus. Carcinoma of the cervix occurs fifteen times more frequently than does carcinoma of the fundus of the uterus. If there is a myoma in the fundus of the uterus we find that carcinoma is four times more frequent in the fundus than in the cervix, which means, at

least so far as I can see, that there is something about the irritation of the myoma that leads to a carcinomatous condition in the uterus. One of the strongest arguments I have heard advanced against operating on these cases has been the finding of so many myomatous uteri in the dead-room. Probably there are just as many patients who have gallstones that are found postmortem, but we do not think of them during life. I am very glad to have heard Dr. Stremmel's paper.

Dr. Stremmel (closing the discussion):—I have very little additional to say, but I think it is dangerous to advise a woman not to be operated on when she has a tumor. I have a patient at present in the hospital who has carcinoma that has passed beyond the possibility of operation on account of having been advised some years ago not to submit to operation for a simple fibroid. That case is inoperable now. If she had not been so advised she would have had it out long ago and would have been saved the tortures through which she is going now. These cases should not be neglected any more than a diseased appendix.

NOTES ON THE TREATMENT OF ACUTE INSANITY.

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CHICAGO, ILL.

So far as its treatment is concerned acute insanity may be defined as a disease which impairs or destroys the patient's capacity to cooperate with, and indeed not infrequently prompts him to vigorously oppose, those who seek to institute measures intended to promote his cure or comfort; it also disqualifies him from conforming to the conventionalities of social, civil or family life so that some special provisions have to be made for his proper care throughout the course of his disorder. Practically this usually requires the exercise of such arbitrary authority as can best be applied in an establishment specially equipped for the purpose. In reference to their treatment, patients suffering from acute insanity may be divided into two classes. In the first may be included those in whom there is a morbid excess of bodily and mental activity, and in the second those in whom there is a pathologic deficit in these particulars. The former may be boisterous, boastful, blasphemous, obscene, violent and homicidal, the latter apprehensive, silent, hopeless to the point of despair and suicidal. These two characteristics may alternate, if indeed they be not occasionally combined in the same individual. Either excessive or defective activity may be so pronounced, accompanied as they frequently are with persistent refusal of food and insomnia, as to excite serious apprehension of fatal exhaustion.

Acute insanity, aside from that which accompanies general paresis or those cases which from the first show pronounced signs of mental deterioration, tends strongly toward recovery, and the indications for treatment are, therefore, to assist and not retard Nature in her restorative efforts.

Treatment in most cases of acute insanity can only properly be carried out in an institution specially adapted to that purpose, and what I have to say is intended to apply to measures therein employed.

First, cases presenting excessive activity may be considered. It is always desirable that every patient should be treated individually; for instance, if he be noisy he should not be stupefied with drugs because his noise disturbs others; unless, however, special provisions are at hand for his isolation or perhaps more properly insulation so far as any noise he may make is concerned, application of the principle of the greatest good to the greatest number may prevail, and the individual suffer accordingly. Indeed, I may now state that THE MAIN PURPOSE OF MY REMARKS IS FIRST TO CALL ATTENTION TO THE IMPORTANCE OF HAVING SUCH PROVISIONS IN INSTITUTIONS FOR THE TREATMENT OF INSANITY AS WILL PERMIT THE PHYSICIAN TO REFRAIN FROM ADMINISTERING SEDATIVE DRUGS EXCEPT ONLY WHEN HE BELIEVES THEY WILL BENEFIT THE PATIENT TO WHOM THEY ARE ADMINISTERED, with practical suggestions for the accomplishment of this object; and, SECOND, TO EMPHASIZE THE IMPORTANCE OF THE FRESH-AIR TREATMENT OF ACUTE INSANITY, with hints as to how this also may be carried out in practice. That fresh air is highly beneficial to persons suffering from tuberculosis has been clearly understood for many generations, and no doubt a few physicians have individually made some special provisions for having their patients kept much in the open air. But it has only been in the last decade or thereabout that a well-defined fresh-air method of treatment has been developed and come to be pretty generally understood and made use of; so, too, doubtless individuals have appreciated the value of the principles herein brought forward in reference to the insane and embodied them in practice.

I think them so important, however, that I should like to see their value generally recognized and methods for their practical application perfected and adopted.

Many cases of the active variety of acute insanity are very noisy and wakeful, especially in the early days or weeks of their attack. Certainly sometimes if not generally it happens at the expiration of any definite period as, say, a week; the patient's physical condition will be far better if sedative drugs are withheld than it will be if the physiologic effect of these be maintained. For such patients a room of ample size should be provided; this room should be supplied with forced ventilation so as to keep the air strictly fresh even when one or more persons have to remain in it. In the country, where there are no trees or adjacent tall buildings to deflect air currents, the rooms of an institution may be satisfactorily ventilated by the gravity system by using the basement as an air chamber and providing each room with an independent inlet and outlet flue. Those rooms, however, which are devoted to the care of noisy patients and, therefore, have to be kept closed, especially in the summer months when a gravity system is inactive, should be supplied with noiseless electric fans in the outlet flue. In such a room, 15 by 12 by 11, so equipped, occupied by two nurses and a patient, the air remains perfectly fresh. I have had such rooms at my disposal now for nearly four years, and have come to regard them as almost indispensable in the treatment of certain

cases of acute insanity. Incidentally I would suggest that the plan here outlined of supplying an abundance of fresh air is equal or superior to the so-called outdoor treatment in cases of pneumonia, as it involves no increased liability to exposure either of patient or nurse. My experience happily is limited to one case which occurred in a woman of 38, who made a good recovery while suffering from a very severe attack of acute mania.

The value of keeping a patient in the open air as a means of promoting his physical vigor, sleep, appetite and digestion has been amply demonstrated in the last ten years in the treatment of tuberculosis, and this is, of course, desirable in all cases of acute insanity, though some are so noisy and unmanageable that it is not practicable to keep them much out of doors. For those patients who are orderly enough to properly permit them to remain out of doors I have found open pavilions facing south, with concrete floors and concrete walks leading to them, well suited for this purpose. They are always dry and, therefore, always available. They may be supplied with comfortable lounges, and in the winter foot-warmers with a fuel cartridge may be used to supply necessary heat. It would, in my opinion, rarely be advisable to attempt to have cases of acute insanity sleep out of doors, as their cooperation could not be counted on to prevent dangerous exposure even if they were not noisy.

While I believe the measures above outlined have a very wide application in the treatment of acute insanity, indeed are of cardinal importance, I do not wish to be understood as intending to maintain that sedatives, hypnotics and hydrotherapy are not useful. In regard to the latter I wish to say, however, that, while some form of it may be employed in many cases with marked benefit, its value by no means justifies the advocacy it has received in some quarters in the last few years as a sort of cure-all, nor the expenditure of huge sums for installation of elaborate plumbing which has been made in various public institutions throughout the country. Nevertheless, I maintain that any one who studies his cases closely and has at his disposal such provisions as I have described will, I believe, carry some of them at least through to convalescence without the employment of any medicinal sedative, hypnotic or even tonic, or at any rate he is likely to become more and more abstemious in the matter of prescribing medicinal sedatives and hypnotics. A pretty wide experience with both methods has convinced me, as I have said before, that in most cases of acute insanity when insomnia is pronounced, the patient's condition is likely to be far more satisfactory, at the end of a stated period, if medicinal hypnotics and sedatives are entirely withheld than if they are freely administered. The disease generally runs a course of several months, and the secretions and consequently the metabolic processes are often profoundly deranged by an attempt to maintain medicinal sedation over so long a period. Indeed it is not difficult to conceive how occasionally such medication might determine a fatal issue or, worse, permanent mental impairment in a case otherwise curable. Finally I wish to remark emphatically that an establishment adapted to the treatment of acute insanity should have rooms impervious to noise, and equipped with efficient forced ventilation.

It should also be supplied with open pavilions or porches so as to enable certain patients to spend their days wholly in the open air. I believe the medical profession should advocate the installation of accommodations and appliances suitable to the practical application of the principles above described in public institutions devoted to the treatment of acute insanity.

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PYLORIC STENOSIS IN INFANCY.

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Pyloric stenosis in infancy is a disease of sufficient frequency to merit the attention of every physician. It is difficult to determine in what proportion this disease is encountered among sick infants; it may suffice to say that in my practice I have seen 12 cases during the past five years that have been recognized as pyloric stenosis. Every physician may expect to meet with such cases, and if attention is directed to the striking symptom complex of the disease, and the infant submitted to a careful examination, the diagnosis is by no means difficult. The essential symptom for which the physician is consulted is vomiting and, depending very naturally upon it, wasting. The vomiting is persistent. Most of the cases have been breast-fed and they may have been fed quite regularly, or, if fed artificially, it may have been done intelligently, yet the babe vomits. In this manner the vomiting differs from vomiting that may occur in "dyspepsia," as in the latter condition the diet is usually faulty. Nor are the other symptoms of "dyspepsia" present. The tongue is not white, there is no tympanitic distention of the abdomen and the bowel movements are not loose nor frequent. The vomiting is propulsive. The word propulsive prefixed to vomiting suggests cerebral diseases, but these babies are very bright and alert and present no evidence of any intracranial disorder. The vomiting occurs many times a day, perhaps not after every feeding, but when one or two feedings are retained the subsequent vomitus may be of an unusually large amount so that the mother may tell us the babe vomits more than it eats. In some of the cases the vomiting has ceased for a day or more, but it soon recurs with its usual characteristics. The movements of the stomach that terminate in vomiting are painful to the child, and colic is a frequent symptom. At times the babe senses the relation between ingestion of food, stomach contractions and pain, and refuses, or even cries, when food is offered it. Hunger, however, overcomes its fears and it is only in rare instances that the child refuses its food for a very long time, during which period vomiting may be absent and the disease might go unrecognized.

If the child vomits the greater part, if not all, of the food he obtains it follows that the bowel movements would be very small in amount.

Obstipation is in direct degree with the vomiting, and for a like reason that little food reaches the absorptive part of the bowel the urine is very scanty.

Emaciation progresses apace. The amount of food that passes the stenotic pylorus varies, but it is almost always an amount insufficient to satisfy the body demands, so that the babes must consume their own tissues and they become progressively thinner. If the stenosis yields and allows more food to pass the pyloris the failure is checked and the babe may gain in weight.

These symptoms usually make their appearance some weeks or even months after the birth of the infant; rarely are they present during the first few days of life. For several weeks the babe seems perfectly normal, even making unusual gains in weight, a condition that would be incompatible with any degree of stenosis. The term congenital which is so often applied to the disease may be objected to for this reason. Three out of four cases occur among males. Many times it has been noted that two children of the same parents have this disease. I have observed this in my twelve cases. The emaciation is not peculiar, but such as may occur in any wasting disease. Inspection of the abdomen shows a striking prominence in the epigastric region, in contrast to the flatness of the remainder of the abdomen. If this prominence be observed after the infant has taken its food or while it is nursing a visible exaggerated gastric peristalsis can be seen. It usually begins well over on the left side of the epigastrium, as a wave-like prominence about the size of a lime, which slowly passes over to the right, traversing the entire epigastrium, and sinks beneath the surface in the neighborhood of the right mammary line. Two, or even three, waves may be seen simultaneously passing across in this manner. Such visible gastric peristalsis is a positive indication of gastric stenosis. It could be hardly confounded with the faint vermicular movements of the bowels that at times may be seen in debilitated infants with flaccidity of their abdominal walls.

While the gastric peristalsis is active it may happen that the child will vomit or it may appear to be in pain.

Palpation of the abdomen will often detect a firm, hard tumor-like mass, about the size and shape of the terminal phalanx of the little finger, lying deeply in the abdomen near the median line, about midway between the umbilicus and the ensiform. The stomach tube may reveal the presence of food that has been retained in the stomach a longer time than would occur in health. Three, or even more, hours after the babe has received a feeding the entire amount administered may be recovered by the tube, and it may be discovered that an unusual quantity of fluid can be contained in the stomach, which is greatly dilated. The dilatation can also be confirmed by palpation of the swallowed tube lying along the lower border of the stomach, reaching even below the umbilicus. The examination of the stomach contents adds nothing of peculiar importance. Given an infant with a history of persistent vomiting, obstipation, scanty secretion of urine, progressive emaciation and,

on examination, a distended epigastrium with visible gastric peristalsis, a diagnosis of pyloric stenosis is assured.

The nature of the stenosis, pathologically considered, consists of a hypertrophy of the muscles of the pyloris, and with it, also, a hypertrophy of the muscular coats of the stomach wall. There are three views as to the nature of the hypertrophy. Hirschsprung considers there is a real organic stenosis with a subsequent muscular hypertrophy. Pfanndler thinks there is no real muscular hypertrophy, nor organic stenosis, the appearance of thickening, as well as the obstruction, being due to a spasm of normally developed muscle.

Thompson believes that there is a great muscular hypertrophy which is the result of overwork, and the overwork is dependent upon nervous incoordination. Whatever may be the nature of the pyloric stenosis the conditions that follow in the infant are dependent upon (1) an unduly prolonged closure of the pyloris and (2) unusually forcible contractures of the stomach.

An appreciation of the consequences of pyloric stenosis in infancy can best be reached in my judgment from an analysis of the cases observed by some competent clinician of large experience. The cases reported by Thompson of Edinborough will suffice. Since 1894 he has seen 41 cases; nine of them were treated surgically, with four recoveries. Of the remaining 32 cases one was under treatment at the time his report was made. Out of 31 cases treated medically 27 died—a mortality of 87 per cent.

These figures are not in accord with the published statistics of some other observers, notably in Germany, yet they tally with my smaller number, so far as the medically treated cases are involved. Of the 12 cases that I have records of, 8, treated surgically, 7 recoveries; mortality, 12 per cent.; 4, treated medically, 3 deaths; mortality, 75 per cent.

Treatment.—When the diagnosis is assured surgery offers the greatest chance for recovery. During the time, however, that the diagnosis is uncertain and perhaps in all cases if the condition of the child will permit it, medical treatment may be carried out, with a view of relaxing the pyloric spasm.

Gastric lavage in many cases will overcome the stenosis, but, unfortunately, not for a very long time. Lavage with normal saline may be performed daily or at such intervals as may seem helpful. Sedatives and antispasmodics have been without avail in my hands. Rest to the stomach, with nutrient enema, has been tried. I have had no success thereby. Large poultices to the abdomen are strongly advocated by Heubner; they are harmless, but temporizing. Regarding the diet, we are told by some to feed small quantities at little intervals; others recommend feeding a large amount at great intervals; some suggest cream mixtures, others a fat-free diet; from such diametrically opposed advice we may conclude that the diet is indifferent when the disease is established. Whatever plan of medical treatment we pursue should be persisted in only so long as unequivocal improvement follows. The most certain sign of amelioration of the stenosis is cessation of vomiting, normal bowel movements and gain in weight. It is certainly unfair to everyone con-

cerned to subject these babies to medical treatment for a prolonged period, during which the babies become progressively thinner and weaker.

The operation of election in these cases seems to be a gastroenterostomy, rather than pylorectomy or devulsion of the pylorus, and in seven of my cases a posterior gastroenterostomy was made. Following is a brief summary of the operated cases:

Case.	Sex.	Age at Onset.	Age at Operation.	Nature of Operation.	Operator.	Result.
1.	M.	3 weeks	3 months	P.G.E.	Van Hook	Recovered
2.	F.	1 month	3½ months	P.G.E.	Van Hook	Died
3.	M.	5½ weeks	2¼ months	P.G.E.	Van Hook	Recovered
4.	M.	4 weeks	2 months	P.G.E.	Van Hook	Recovered
5.	M.	4 weeks	2 months	P.G.E.	Murphy	Recovered
6.	F.	3 weeks	4½ weeks	A.G.E.	McArthur	Recovered
7.	M.	3 weeks	6½ months	P.G.E.	Richter	Recovered
8.	F.	3 weeks	6 weeks	P.G.E.	Richter	Recovered

CASE 1.—Male, born in Wesley Hospital in October, 1905; family history negative; mother nursed the baby for a week and it was fed artificially. About the 25th day vomiting was first reported, which gradually became more frequent until it was noted that the baby was vomiting many times a day every propulsion and beginning to lose in weight. Bowels would only move with an enema, and the result was a small dark movement. When two months old it was examined in the clinic and presented great emaciation. Inspection of the abdomen showed a very distinct gastric peristalsis which could easily be seen at a distance of 30 feet from the baby; on introduction of the stomach tube it could be outlined by palpation following the lower curve of the stomach about one inch below the umbilicus. The pylorus could be felt as a hard mass about the size of a cherry just above the umbilicus slightly to the right of the median line.

Treatment was carried out for four weeks in an attempt to overcome the pyloric spasm. Gastric lavage. Rectal feeding with stomach rest; the many antispasmodics by mouth, poultices to the abdomen, but none of these had any influence on the stenosis and the baby continued to lose in weight. Operation was advised. Operation by Van Hook. Posterior gastroenterostomy. Patient stood the operation very well; was given by mouth a teaspoonful of water a few hours after the operation, and repeated every hour. Second day one ounce was given every two hours and feeding gradually resumed. Good recovery.

CASE 2.—Sent to Wesley Hospital by Dr. McChesney, of Chicago Heights, on March 14, 1906. Babe began to vomit when 4 weeks old and had grown weaker and smaller. In addition to the emaciation there is a distinct prominence in the epigastric region with flatness over the remainder of the abdomen. For a week treatment was carried out in an attempt to correct the vomiting but unsuccessfully; no improvement with nutrient enemata, the weight of the child falling in the week from 7 pounds to 6 pounds 9 ounces. On March 21, 1909, operation by Dr. Van Hook; posterior gastroenterostomy. The baby did not react and died a few hours after the operation.

CASE 3.—Admitted to Wesley Hospital, Oct. 12, 1907. Male, born Aug. 15, 1907. Parents young and in good health. Labor was normal at birth, 8½ pounds. Nursed by mother, and steadily gained in weight until, when it was 4 weeks old, it weighed 12 pounds.

About Sept. 23, 1907 (5½ weeks old) vomiting was noted, and the vomiting occurs every day from 3 to 10 times, the nurse reporting that the baby vomited every particle of food he took. The movements were small and enemata were used. The food was changed a number of times, but to no avail.

Examination.—Emaciation. Negative examination of organs above diaphragm. Abdomen; giving child something to suck, one could see a rounded prominence

about the size of a lime appearing in the left epigastric and slowly move towards the median line, and before it disappeared it was followed by a second wave-like swelling which would pass over the epigastrium in a similar way. To the right of the median line and about midway between ensiform and umbilicus there can be distinctly palpated a very firm body about the size and shape of the terminal phalanx of the little finger, lying very deeply in abdomen and only slightly movable.

Treatment.—Gastric lavage. Bromid and opium by mouth; warm poultices continually applied for two hours. Three times in the 24 hours, a very bland diet was tried for a few days. The baby was losing ground very fast. Operation was performed Oct. 18, 1907, by Dr. Van Hook, anterior gastroenterostomy. Recovery uneventful. Boy now in perfect health, June, 1909.

CASE 4.—Baby sent by Dr. McChesney to Wesley Hospital. Normal birth and did well for about four weeks, when vomiting was noted. Vomiting did not give to treatment; baby growing steadily thinner and weaker. Constipation very obstinate.

Examination.—Emaciated; visible gastric peristalsis and palpable pyloric tumor. Operation by Dr. Van Hook; posterior gastroenterostomy. Uneventful recovery. Now in good health, June, 1909.

CASE 5.—Mercy Hospital. Baby B., 8 weeks old, brought to Mercy Hospital by Dr. Brenner, of Quincy, Ill., Dec. 7, 1907. Born at term and weighed at birth 10 pounds for four weeks, was normal when vomiting began and has been incessant for past ten days; has not had a movement of the bowels except when aided. Shows sign of considerable distress immediately after eating. Baby has lost considerably in weight and strength despite medical aid.

Examination.—Distinct gastric peristalsis can be seen over epigastrium and the enlarged and hardened pylorus can be palpated. Posterior gastroenterostomy performed Dec. 7, 1907, by Dr. J. B. Murphy. Recovery rapid and uneventful.

CASE 6.—Born at St. Luke's Hospital. Service of Dr. Gay, Feb. 14, 1909; weight, 7 pounds 6 ounces; lost a few ounces after birth, which was regained by loss of first week and baby weighed 7 pounds 8 ounces. The first vomiting recorded occurred when baby was three weeks old, and from that time it persisted daily. The stomach was washed, the diet altered in many ways, but to no avail. Gastric penetration was quite evident, though no pylorus could be palpated. On March 15 the baby weight having steadily fallen to 6 pounds, it was operated upon by Dr. L. L. McArthur and an anterior gostroenterostomy done. Vomiting ceased immediately after operation and on April 5, 1909, baby was discharged from hospital; weight, 7 pounds 4 ounces.

CASE 7.—Baby D., reference of Dr. Hendricks, Green Bay. Born Aug. 27, 1908; birth weight, 8 pounds. For a few weeks was normal, then began spitting up his food more and more until vomiting was a persistent symptom. He was taken off the breast and tried on one after another. Different food with no improvement in the symptoms. He had considerable pain and marked obstipation. On Feb. 12, 1909, was admitted to Wesley Hospital at the age of 5½ months. Weight, 8½ pounds. Examination negative, save as regards the stomach. There was some fulness in the epigastrium with sinking of the remainder of the abdomen. While feeding the baby and watching the abdomen large gastric waves could be seen distinctly passing across the epigastrium. Gastric lavage demonstrated a dilation of the stomach. With careful dieting and daily lavage there was a distinct improvement in the general condition, the weight ascending to 9 pounds in a week and the bowels moved daily without any aid. Baby sent home as improved. But almost immediately the vomiting recurred and baby began to fail, and March 1 a posterior gastroenterostomy was performed by Dr. Richter. The operation was well borne and babe gained an ounce a day for thirty days. Symptom of stenosis then recurred and a second operation was performed, break-

ing up some adhesions around the stomach and the babe began to improve once more and is now reported as progressing very well.

CASE 8.—Baby L., fourth child in family. Family history, a year ago lost a baby at age of 6 months with history of persistent vomiting and extreme emaciation. At birth the babe was normal and did well for two weeks, when vomiting began and has been persistent. Gained one pound in first two weeks; no gain. First saw the babe when three weeks old. Mother is nursing babe. For a week tried with sedatives and digestants to allay the vomiting, but to no avail. Then washed stomach with normal saline. On filling the stomach with fluid very evident gastric waves could be seen passing across epigastrium. After the stomach washing for two days there was no vomiting, but then it recurrred. Stomach washing again resorted to and no vomiting for thirty-six hours. Baby was taken from mother's breast and fed on small amount of whey every three hours, with no relief. In view of the death of a child under similar conditions the father asked for surgical aid.

Operation.—May 22, 1909; operator, Dr. H. M. Richter. Stomach greatly distended and the pyloris converted into a hard cartilaginous-like mass. Posterior gastroenterostomy made. Little shock from operation. Vomited the day succeeding operation but not since. Has gained a pound in weight in two weeks on mother's milk and seems in excellent condition.

DISCUSSION.

Dr. Alfred C. Cotton, Chicago:—Mr. President: I have nothing to add to this very admirable paper, whose author has given us such a careful and succinct description of the symtomatology and physical signs, but I think it is my duty to go on record in regard to the medical treatment of these cases, and particularly as to the method of feeding. These cases are not rare, as is evident by the record of the essayist. Everybody has seen them, but not everyone has recognized them. Many of these cases pass as cases of marasmus to a fatal termination, no post-mortem examination being made, and after having fatal cases we are prompted to inquire if these cases of so-called marasmus which terminated fatally were not instances of stenosis of the pylorus. That there are widely varying degrees of pyloric stenosis is amply evident from the outcome of the cases. It was not many years ago when we considered congenital pyloric stenosis as fatal, and we were apt to think all such cases were congenital. Dr. Walls brought out very clearly the point that many times the child will appear normal and gain in weight. In other words, it is a very promising child up to the second, third, and even fourth week, then there is some acute attack of indigestion which is usually attributed to dietetic errors, and I have no doubt is preciptated by dietetic errors, bringing on the first symptoms of a disorder that ultimately appears to be stenosis of the pylorus. It is evident, too, that many of these cases recover. It is difficult to determine the degree of stenosis. The essayist noted that exaggerated peristalsis, with profuse vomiting, is indicative of a degree of stenosis. He mentioned the absence of fecal matter from the stools. But some of these cases with marked stenosis of the pylorus, in which we have an enormous distention of the stomach, with the vomiting of a large quantity of material, which the nurse or mother will tell you is three times as much as the child takes into its stomach, with exaggerated peristalsis, and absence of fecal matter, do recover temporarily. It seems to me diet has something to do with the recovery, and particularly the apparent conditions as to the quality of the food must be considered, as well as the quantity and the frequency of feeding. I have known some physicians to say, "Let us give the child a good meal; he is going to vomit anyway, and if we give him plenty he will absorb enough of it to nourish him." But with overfeeding as to quantity at the time, I think there is a tendency to induce gastric dilatation or gastroptosis, and extreme dilatation with gastroptosis is very unfavorable in this condition. It militates against the emptying of the stomach where there is

not complete stenosis of the pylorus. I would urge, therefore, that we feed these patients at short intervals in small quantities, and if possible prevent this dilatation. Lavage is very valuable, and lavage performed as often as five or six or even seven or eight times in the twenty-four hours. I have seen valuable results from stomach washing with a weak solution of bicarbonate of soda to precede the ingestion of food in the majority of cases. One thing that has served me successfully in feeding these little patients is to feed them frequently at short intervals, always after lavage.

Dr. W. C. Bouton, of Waukegan:—I had a case about four months ago where I was in doubt as to the diagnosis at the time, but after hearing Dr. Walls' paper I am inclined to consider it a case of moderate pyloric stenosis. The baby was four months old; it had been fed almost everything in the catalogue. The mother stated that the child had been vomiting for some time and could not retain its food. I thought that by putting the child on a proper method of feeding it would probably retain its food, and I proceeded to try first one thing, then another, as recommended by the leading pediatricians. I began with the use of barley water and egg water and the child would not retain them. Then I tried simply boiled water and it could not retain even that. I tried giving the stomach rest for twelve hours, thinking that would quiet the irritability. It made no difference; the child vomited just the same. I tried peptonized milk with the same result. The child was rapidly losing weight. I saw the child every day for two weeks, and it still continued to lose flesh. They were poor people and I told the mother that it seemed a useless expense to continue my services. I told them I had done everything that I could and they had received the best advice I could get from our modern text-books on pediatrics and that it seemed to me there was nothing more to be done; that, frankly, unless there was a change for the better, the child would soon die. I did not see the child again for several days, when the mother informed me that the child had been able to retain a little nourishment. The last thing I tried was modified skimmed milk. After a few weeks I saw the child again and it gained about a pound, and a few days ago, when I called, I found that the child weighed about fifteen pounds. When I saw it first it weighed about seven pounds. After this almost continuous vomiting for two or three weeks in spite of everything that could be done for it and without any apparent reason for the change, the child began to improve and has kept on gaining steadily. It seems to me that in this case there was a moderate degree of pyloric stenosis.

Dr. Walls (closing the discussion):—Vomiting is but one feature of the symptom-complex in pyloric stenosis. Vomiting is one of the most common symptoms we meet with in young children. If a child is persistently vomiting, we think of the possibility of the vomiting having an organic basis, such as a pyloric stenosis.

I would not like to pronounce Dr. Bouton's case as one of pyloric stenosis, although it may have been. In the cases I have had under observation I have submitted some of them to prolonged medical treatment, placing them on a moderate amount of this, that and the other food, but it has been indifferent. I have never suggested that any one of these cases should go to operation until some form of medical treatment had been tried. Thompson is a pediatrician of large experience, and I took his statistics as probably representing what would happen in these cases if treated medically, and certainly twenty-seven deaths out of thirty-one cases treated medically is a formidable mortality. Surgery seems to me to offer these children greater possibilities of recovery than are offered by medical treatment. If we submit them to medical treatment and find there is very little or no improvement, and if a diagnosis of pyloric stenosis has been established, I think they stand the best chance of recovery with surgical treatment.

A GENERAL CONSIDERATION OF THE NEEDS OF CRIPPLED CHILDREN, THEIR TREATMENT AND THE RESULTS TO BE EXPECTED.*

JOHN RIDLON, M.D.
CHICAGO.

Some three months ago Dr. Dicus asked me to read a paper, not to make an address, before this society. I assented on condition that he name the topic in orthopedic surgery that in his opinion would be interesting to the members of the society. I heard nothing from him until he telephoned me ten days ago and told me that I was expected to give an address this evening on some topic of general public interest. Ten days is too short a time for any busy practitioner to gather facts and statistics upon which to found an argument and prove his conclusions.

I would have been glad to have spoken to you upon the need of a state institution for the treatment and education of the destitute crippled children of the state of Illinois, and I had arranged my ideas somewhat along those lines, for there is a crying need of such an institution. But four days ago I learned that Mrs. Lysander Hill, a member of the Board of Directors of the Home for Destitute Crippled Children, was to address the ladies of Princeton on Monday, yesterday, on practically the same subject. To save the ladies of my audience from a repetition of facts I must again readjust my ideas.

All this is in the way of excuse for myself and as preliminary to begging of you a kindly toleration, a mental attitude as generous and uncritical as the mental attitude one must have who submits himself to treatment by Christian Science, the Mind Cure, of the Emmanuel Movement, and such like. In this connection I may perhaps be permitted to tell you of a friend, an eminent practitioner of medicine of an eastern city, whose wife at the age of 48 or 49 sought relief from her growing nervous irritability from the Rev. Dr. Worcester, rector of Emmanuel Church in Boston, and head of the so-called Emmanuel Movement. When I showed some surprise that my friend would suffer his wife to take up with such an absurd fad he defended himself by telling me this story:

Well, said he, I had for a patient a clergyman on the verge of nervous prostration. His wife was 48 or 49 years old. She was nervous and irritating and nagging most of the time. His children were well grown and, like the children of many clergymen, giving him no end of trouble. He was having trouble with his vestry and they were not paying him his salary as agreed. And the soprano in the choir and the organist of the church were quarreling, and he was having no end of trouble. Well, said the doctor, I treated his nervous prostration by all the known and approved methods of medicine, but he got no better. So one day I said to him:

"Dr. Brown, I am going to cure you by mental science." "What nonsense," he answered. "How can you expect to cure a man like me

* Read before the North Central Medical Association at Princeton, Illinois, Dec. 1, 1908.

in that way?" "Well," I answered, "I am going to cure you and by mental science." "And what do you expect me to do?" he asked. "This," I answered, "I want you to have your watch carefully regulated. Then I want you each morning to go down to the railroad station and have your watch inspected by the inspector of the trainmen's watches. Then I want you to keep careful account of the time and on the minute of every half hour you are to stop whatever you may be doing and wherever you are you must say audibly, 'I don't care a damn.'"

So while you are listening to my wandering remarks hold yourselves in this generous attitude and from time to time as your attention wanders say to yourselves the magic formula which cured Dr. Brown.

I think I need not define what we mean by crippled children. Broadly, they may be divided into the following classes: 1. Paralytics. 2. The rachitic. 3. The congenitally deformed. 4. Those suffering from chronic joint disease.

First. The paralytics make up the greater number, and may be divided into the cerebral and spinal cases. The cerebral cases are comparatively few when compared with the spinal cases, and fortunately so, for most of the cerebral cases have some mental obliquity, at times amounting almost to idiocy. The results of the treatment of these cases depends upon the mental condition. If the child is intelligent enough to understand directions as to physical movements and exercises and tractable enough to make an earnest effort to do as he is directed the results of treatment will be well worth while. The treatment consists of lengthening the tendons of all shortened muscles either by simple tenotomies or more elaborate surgical procedures, retaining the limbs in plaster splints for a short time, and then daily massage, passive movements, and active physical exercises performed at word of command, to be persistently continued for from one to two years. But to operate without the assurance of the long-continued after-treatment is useless. The spinal cases are mainly the result of acute anterior poliomyelitis. These cases are ordinarily called infantile paralysis, and we used to believe that the disease attacked only infants. But now we know that older children suffer as frequently as infants, and that it is seen in adolescents and adults and occasionally in old persons. The oldest case coming under my observation was a lady 62 years old. It usually occurs as isolated instances, but occasionally as epidemics. The people should know that there are no absolutely certain diagnostic symptoms at the onset; that any physician may be unable to make a diagnosis for several days, or may make a wrong diagnosis; that even if a correct diagnosis is made at the onset nothing can be done to cure or limit the disease or prevent the paralysis, and that while very few and perhaps none die from the attack, not more than one case in a thousand ever fully recovers. The treatment consists in the prevention of deformity, the correction of deformity in neglected cases, the use of braces to supplement muscular defect, and massage and exercises to maintain nutrition and restore function to those muscles whose nerve supply has been inhibited and not wholly destroyed.

Second. The rachitic deformities, such as bow-legs and knock-knees, are on the increase, and are no longer confined to the crowded, dark and damp quarters of the city poor, where the overworked mother nurses the child for a few months and then feeds it on whatever food happens to be upon the family table. While most of the cases of rickets still come from the poorer and more ignorant of our foreign population, we, nevertheless, do find rickets among the well-to-do and educated classes, rickets due to inherited syphilis, to any and all of the proprietary infant foods, to sterilized and pasteurized milk, and to milk that has been mutilated by being run through a cream separator. Rickets is a disease due to malnutritition. It may be, and often is, recovered from without the development of serious bony deformities. It is probable that some slight cases of bow-legs and knock-knees are recovered from without treatment by braces or by operation, but I have never seen such a case. A few slight cases recover when treated by braces, but all aggravated cases must be corrected by operation, either osteotomy or osteoclasis.

Third. Congenital deformities are very various in their manifestations, but the two classes that mainly interest us are the congenital club feet and the congenital dislocations of the hip. The congenital club feet are mainly of the equino-varus variety. There are a few cases of congenital calcaneo-valgus. Of these I have seen two in 30 years that required operation; all others were rapidly corrected by manipulation and a simple retention splint. The cases of equino-varus, however, run all the way from the slight case which can be corrected in a few months by simple hand-stretching to the case with a wedge-shaped astragalus that can only be permanently corrected by a mutilating operation; namely, the enucleation of the astragalus. However, more than 90 per cent. of the cases can be cured by the operation which I usually employ; namely, the forcible modeling of the foot by the hands over the wedge-shaped block, supplemented in some cases by subcutaneous tenotomy of the posterior tibial tendon and anterior half of the inner lateral ligament of the ankle, and occasionally division of the astragalo-scaphoid capsule or plantar fascia. This to correct the varus deformity, indeed, to overcorrect it. Occasionally in adult feet it is necessary to use the osteoclast in place of the hands and wedge block. Then the antero-posterior deformity is attacked by a tenotomy of the Achilles tendon and a forcible stretching or tearing of the posterior ligament of the ankle joint. Perhaps there may be cases where Phelps' open operation is demanded, but I have not seen such a one among my last two hundred cases. To be sure, in four or five instances I have, while modeling the foot by hand, torn the foot along the line of Phelps' incision. But, however the deformity may be corrected, or better, overcorrected, the treatment of the club foot has only just begun.

The success of the treatment depends fully as much upon a perfect retention of the corrected foot for from four months to four years, as the operation which gives a perfect overcorrection. In the hands of most men the best retention dressing is a heavy plaster-of-Paris boot from the toes to the knee. In this the patient walks after the first ten days.

Braces, either for correction or for retention, ordered from an instrument maker in a distant town, are worthless. Unless the surgeon can construct the brace himself or have it constructed under his personal supervision by the blacksmith and the harness maker or shoemaker, he will be wise to use no brace, but place his dependence upon plaster-of-Paris. I am often asked what age should be chosen for the beginning of treatment, and I answer that the earlier the treatment is commenced the easier it will be to correct the deformity, but the more difficult will it be to retain the foot in the corrected position. I always encourage the mothers of these children to stretch the foot by hand many times a day from the earliest infancy, and I occasionally put on a removable plaster splint, but I do not like to operate or do very much myself until the child has learned to walk well. By that time the skin has become tough enough to stand some punishment and the foot has grown large enough to handle and to hold in a plaster splint, but the important thing is that we have the advantage of the child standing on the feet in the corrected position and treading out the deformity in walking. A most important thing in these cases is the diagnosis of a cure. A case is not cured, and is likely to relapse, as long as the released foot tends to drop back into the position of the original deformity. Cases treated as I have suggested rarely relapse. When they do it is usually due to the shape of the body of the astragalus, it being wedge-shaped instead of cuboid. When it is so extremely wedge-shaped that the tibia articulates with the calcaneum at the back of the ankle joint, enucleation of the astragalus is necessary to insure a permanent cure.

Since Professor Lorenz came to this country six years ago to operate on the child of a Chicago multimillionaire for a congenitally dislocated hip, and incidentally for a fee of $30,000, both the public and the medical profession have been interested in the subject of congenital dislocation of the hip. There has been much misunderstanding of the subject, both from the sensational reports in the newspapers and the deliberate misstatements of the facts.

A congenital dislocation of the hip is one where the head of the thigh bone is found to be absent from its socket in childhood without the child having received any injury of sufficient severity to cause a dislocation at a normal hip joint. We may with reasonable certainty assume that some of these hips are not in place before the child is born. We know that some are not in place when the child is born. We know that some so-called congenital dislocations can not be diagnosticated as such until the child has walked for some time. Then we know that some hips that are apparently normal for from seven to fourteen years become dislocated, without traumatism, by being used with the leg held in extreme adduction, that is to say, the femoral head leaves the acetabulum and passes backwards and upwards, or may pass forwards and upwards, when the weight of the body is supported with the limb rotated outwards and hyper-extended. We know also that some hips in adult life suffer dislocation from a traumatism, the like of which produces fracture of the neck of the femur in other cases. In a word, hip joints vary from the perfect

hip that will break before it will dislocate, down through those hips that dislocate from injury, those that dislocate without injury when used in an unusual position, those that slip out when the child begins to walk, those that slip out at birth, those that slip out before birth, to those that were never in place at any time.

Bearing these facts in mind it should not be difficult for me to convince you that some hips will be as good as if they had never been dislocated, or about as good, when they have been replaced; or, at any rate, their bony relations will be anatomically perfect. That there are other cases that can be retained in place only with great skill and good judgment. That there are other cases that can not be retained in place by any operation or by any means, because of the anatomical abnormalities in these cases. When subjected to a bloodless replacement in only a very few is the cartilage of the femoral head actually in contact with the cartilage of the acetabulum. This is because of the shape of the head, and the shape of the acetabulum, the hour-glass shape of the stretched capsule of the joint, the pocket shape of the capsule covering over the lower half or two-thirds of the acetabulum, and the lengthening and hypertrophy of the ligamentum teres. In the vast majority of cases operated upon the best that we can honestly say at the time of the operation is that we have placed the head of the thigh bone in the opening of its socket, and that we hope with use while it is retained in that position by the plaster splint that it may so far enter the socket and deepen it that it will remain there when the splint is removed.

And what is really the result? The facts are that about half of them remain there, and the others go forwards and upwards into a position where the patient stands straight and walks well. The percentage of perfect results depends upon luck in any small series of cases and on the experience and skill of the operator, for he who stretches and tears muscles and ligaments unnecessarily in effecting the replacement, as Lorenz did when he was in this country, will have a large percentage of "good" and a small percentage of "perfect" results. I have lost no opportunity to investigate the results of the cases operated on by Lorenz in this country. I have reports from Denver, San Francisco, Los Angeles, St. Louis and Rochester, N. Y., and have personally examined cases in Chicago, Minneapolis, Philadelphia, New York and Boston, and I think that 20 per cent. is a generous allowance for the "perfect" results that he had in this country. To the newspapers Lorenz claimed 80 per cent. of perfect results; to the doctors he claimed only 50 per cent., and that per cent. he has probably reached in the work in his own clinic. But the men who claim 100 per cent. are the men who have had but one case, or men who do not know when they obtain a "perfect" and when they obtain only a "good" result, or they are—liars. Generally they are liars.

In operating upon these cases the age plays some restrictive part. Generally a bilateral case older than 5 years should not be attempted, though I have had a perfect result in one of 10 years. Generally unilateral cases older than 7 years should not be attempted, though I have replaced three at 13 years. The age, however, plays a less important part than the

extent of the upward displacement of the femoral head. A beginner ought not to attempt a case having more than 1 inch of upward displacement, and no one should attempt a case where the upward displacement is more than 2 inches. Generally speaking, the manipulation for effecting replacement of a congenitally dislocated hip should be to carry the femoral head into the acetabulum by way of the cotyloid notch, and with as little stretching and tearing of the soft parts as possible. By this method the retention of the replaced head will be much more certain, though the convalescence after the removal of the splint be somewhat delayed.

By doing the cutting operation of Hoffa one may make sure of a socket large enough to receive the femoral head and know that the head is in place, but the operation weakens greatly the support from the soft parts about the joint, and unless a pretty firm anchylosis results the head is quite as likely to slip out as after the bloodless operation. When a perfect result is not obtained from a bloodless replacement, one has to choose between having a stiff hip from a cutting operation, or a good range of motion with about an inch of shortening, which is the ultimate result of the anterior and supracotyloid transposition of the bloodless operation.

Fourth. Most chronic joint diseases are tubercular, although we now recognize both rheumatoid arthritis and gonorrheal joint disease in children. Tubercular joint disease is practically always secondary to tuberculous glands in the chest or abdomen. The infection is only occasionally inherited—it is practically always contracted from food or from contact with other tuberculous persons, mainly those having pulmonary tuberculosis. Most tuberculous joint diseases cause so much destruction of bone that greater or less permanent stiffness and shortening result. Perhaps 5 per cent. or 10 per cent. under efficient treatment regain normal function without shortening. The principles of treatment are, in a word, protection to the joint. Protection against motion, protection against weight-bearing, and protection against the involuntary muscular spasm that is very troublesome in some cases. This protection is to be had in some cases by rest in bed, by traction devices, by braces, plaster and other splints, and by crutches when the joints of the lower limbs are affected. The importance of the best possible general hygiene, and life in the open air for those running a temperature, is as great as in cases of pulmonary tuberculosis. About half of the cases of joint tuberculosis are complicated with abscesses. Of these the majority go on to spontaneous opening and evacuation unless opened by the surgeon. A certain number disappear without opening when the diseased joint receives efficient treatment. Those abscesses that open spontaneously or are opened by the surgeon usually result in sinuses that go on discharging for months and oftentimes for years.

Recently considerable interest has been shown both by the profession and by the laity in the new bismuth mixture. Some year and a half ago Dr. Emil Beck, of Chicago, injected the sinus of an old psoas abscess arising from tuberculosis in the dorso-lumbar spine for the purpose of

determining the length and course of the sinus by means of an *x*-ray picture. He used one part of subnitrate of bismuth and two parts of vaselin, sterilized, and then liquefied by heat, injecting it into the sinus with a sterile, blunt-tipped, glass syringe. The picture obtained by the *x*-ray showed the sinus to be inoperable. To the surprise of every one connected with the case the sinus soon healed without further treatment. This mixture is known as the "No. 1" mixture. Other cases were tried but with less satisfactory results, the mixture running out of the sinuses. Then Dr. Beck made his mixture "No. 2," consisting of 5 parts of white wax, 5 parts of paraffin, 30 parts of subnitrate of bismuth, and 60 parts of vaselin. These are melted on a water-bath and mixed, and then sterilized. The mixture is injected as before. It rapidly solidifies at normal body temperature, but softens and is discharged at a fever temperature. So that if an infected pocket of the sinus should chance to be plugged up the plug melts down and is discharged before any serious harm results.

Immediately after Dr. Beck made his first report we took up the work at the Home for Destitute Crippled Children, and have used the treatment in over 50 cases. Our results show from 40 per cent. to 50 per cent. of the cases close up within two or three months. A few of these open up again later on. A few of the remaining cases are made worse, either by plugging up of infected pockets or by causing sloughing of the skin covering the original seats of the abscesses, and the treatment has to be discontinued; a considerable number appear to be uninfluenced by the treatment. In a word, the treatment is about half as good as Dr. Beck thought when he made his first report, and about twice as good as any other treatment. When one has had some experience it is possible to increase the percentage of cures by treating only carefully selected cases. In our work we have been careful *not* to select our cases in order to obtain such results as any man, no matter how small his experience, may reasonably expect to get.

And now just a word about crippled children in general in the state of Illinois and their needs. They need special and prolonged care for years in order to obtain the best results, many of them need care for as long as they live. The majority of crippled children are destitute, or at least their parents are too poor to give them the long and expensive treatment, or even to pay their board all these years in an institution. All of them need to be educated, and most of them need special education to meet their defects and enable them to be self-supporting. The state of Illinois provides in some measure for its mutes, its blind, its epileptics and its feeble-minded, but it provides no place for its destitute cripples; not one cent for their treatment or their education. A destitute crippled child here in your town can obtain efficient treatment in this state only in Chicago, and there only when some one pays the charges for board and the cost of any apparatus that may be needed. Nothing need be paid to the surgeons for their services. But even then there is no provision for a general or a special education for the child. Nothing educational is done for the child to make him self-supporting. In the Home for Destitute Crippled Children in Chicago the children who can not

walk receive some little educational training. Those that can walk a half a block go to the Spaulding School, a special school of the Chicago school system, where they obtain the training of the ordinary graded school and some little work in so-called "manual training." The school has space for about 100. At the Fallon School on the south side in Chicago there is a room for some 30 cripples.

The Home for Destitute Crippled Children, by crowding, has beds for about 80, and can care for some 2,000 out-patients each year, provided it can raise the money. Only this in a city like Chicago. The Hospital for the Ruptured and Crippled in New York has some 200 beds and cares for about 5,000 out-patients a year. The Orthopedic Hospital has some 100 beds and cares for about 4,000 out-patients, and has a country branch. Then there is a State Hospital for Crippled Children.

The state of Minnesota spends some $10,000 a year in caring for its destitute cripples in a building in connection with the City and County Hospital in St. Paul.

The state of Maryland gives $3,000, and the city of Baltimore $3,000 yearly to the Hospital for Crippled and Deformed Children in Baltimore. But when the representatives of the people of Illinois, assembled at Springfield, are asked to do something for the destitute crippled children of this state they answer: Crippled children do not represent any votes.

RHYTHMICAL INFLATION OF THE LUNGS IN RESUSCITATION.*

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(ABSTRACT.)

Rhythmical inflation of the lungs for the purpose of resuscitating an animal overcome by an anesthetic has been employed by physiologists for many years.

The method has been advocated for the same purpose in human beings by Fell, O'Dwyer, Matas, Kemp and Gardner, and others, but has never gained any popularity. The various methods of artificial respiration depending upon compression of the chest are almost universally employed in preference by physicians and surgeons. The neglect of the direct inflation method, which we believe to be most useful, is partly due to unwarranted criticism.

In this paper we will consider the inflation method, its advantages and disadvantages, and record our own experimental observations.

The objections offered to the inflation method are:

1. The danger of rupture of the lung from excessive pressure and the development of pneumothorax.

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* Read at the Fifty-Ninth Annual Session of the Illinois State Medical Society, Quincy, May 18, 1909.

2. The danger, through overpressure of air, of disturbing pulmonary circulation, lowering the sytemic arterial blood pressure or of stopping the heart.

3. The danger of interstitial emphysema.

4. The danger of infection of the lung and pleura.

AUTHORS' EXPERIMENTS.

In a series of eighteen experiments the following routine was carried out: A dog was chloroformed until both respirations and heart beat had ceased from one to three minutes. Then a hard rubber tube was slipped through the larynx into the trachea and, by means of a pump, air was forced fifteen to twenty times a minute into the lungs. A T tube in the rubber connection provided for the escape of air between inflations and also controlled the pressure of the air during inflation. No precaution was taken to filter the air. In addition to this artificial respiration rhythmical pressure over the heart was often practiced. In unresponsive cases 15 minims of the 1 to 1,000 solution of adrenalin were injected directly into the heart itself to provoke the muscular contractions.

These efforts at resuscitation were successful in thirteen of the sixteen cases. One to three weeks later these animals, with one exception, were in good health. Postmortem examinations were then made and the lungs examined in gross and microscopically.

Capillary hemorrhages were present in two cases. Half the cases showed a marginal emphysema of moderate degree. This seemed to cause no inconvenience to the animals. Pneumothorax was never present. Infection of the lungs or pleura did not occur in any case.

A slight initial lowering of the systemic blood pressure was usually noted, but thereafter the pressure seemed to be steadied and supported by the rhythmical air inflations. We concluded, therefore, that the dangers of this method have been overstated and in reality are slight.

What advantages does direct inflation possess over the method of compressing the chest?

Schafer has computed that in a healthy man the air exchange in a minute is about 5,850 c.c. and the tidal air at each respiration about 450 c.c. He clearly demonstrated that by the Sylvester, Marshall Hall and Howard method the air exchange is inadequate. By his own prone posture method the air exchange is sufficient.

The superiority of the Schafer method for resuscitation in drowning is unquestioned. But in the collapse from anesthesia during an operation the method has grave drawbacks. With a gaping laparotomy wound, the surgeon hesitates to turn the patient on the belly and to exert powerful pressure on the lower thorax. Should a pleuritic effusion or emphysema be present, these movements might force fluid through the mediastinal membrane into the opposite pleural cavity. Moreover, we have seen hemorrhages in the lung result from such manipulation.

Direct inflation of the lung, on the other hand, is capable of maintaining with ease the normal respiratory exchange and if desired may far exceed this amount and thus rapidly carry off the chloroform vapor.

Another advantage of the inflation method is that the heart and circulation can be watched and measures for restoration of the heart action can be conveniently performed.

DISCUSSION.

Dr. John M. Dodson, of Chicago:—Mr. President: I want to ask Dr. Capps a question. It has been a great many years since I read Dr. Fell's article, but I remember one curious phenomenon that he found in a few individuals who were resuscitated from opium narcosis. After the artificial respiration had resuscitated the individual and restored the natural respirations, respiration had to be kept up for many hours, I think for two or three days, before the individuals breathed for themselves. I wondered if such an experience has been met with in these experiments on animals. It was in opium narcosis, and after the opium was eliminated, and no explanation from that source accounted for it. Apparently, there was established, temporarily, an inability on the part of the patient to breathe for himself.

Dr. Capps (closing the discussion):—I understood from the reading of Dr. Fell's experiments that in the case in which artificial respiration was carried on so long, it was done because the case was one of opium poisoning, and in opium poisoning, as is well known, the chief effect of the drug is to paralyze the respiratory centers. I do not think that animals or human beings will long fail to resume normal respirations because artificial respiration is being carried on. In fact, in animals we have frequently continued artificial respiration after the animal started to breathe, for one or two minutes, until the breathing was deep and normal.

A STUDY OF CONTEMPORARY WORKMEN'S COMPENSATION.*

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FIRST PAPER.

The writer makes no claim to having prepared these papers from a purely medical standpoint; in fact, most of the aspects of the conditions discussed in the following pages are altogether legal. None the less, a knowledge of those conditions which inevitably arise in consequence of industrial injuries, and of the methods which the world is adopting to cope with them, is of vital importance to the physician who would keep in touch with the society in which he lives. Such knowledge properly employed is bound to give him, not only keener zest for correct and observant practice, but also a broader sense of his duties toward both the patient and any corporation he may happen to be serving.

The reason, therefore, for the presentation of such a subject by a medical man in a medical journal is sufficiently obvious not to require farther comment or excuse.

Syllabus.

Attention is invited—but not necessarily in the order laid down in the syllabus—to the following aspects of the subject:

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* The synonymous terms Workman and Employé are here used in the sense defined by the English Workmen's Compensation Act of 1906, q. v.

The term Compensation is used in the sense implied in the same Act, i. e., a recompense, or *solatium*, for disablement, and not a wage for service.

1. The development and some of the changing features of contemporary law in so far as the same relates to injuries to workmen.
2. Certain common law doctrines by the use of which a large body of otherwise humane and intelligent lawyers—usually actually or prospectively in the employ of corporations—still thinks the ends of justice are best attained. Certain weak points in these same ancient but still operative doctrines, where many of the best modern lawyers think change is empending and highly desirable.
3. The two methods by which these changes are evolving themselves:

a. The European or Constructive method, based on the principle of a scientific plan of advance through legislative betterment of the *modus vivendi* between employers and workmen.

b. The American or Destructive method, based on the principle of prohibitive enactments, leveled only at the most flagrant encroachments which the employer has been heretofore enabled to make upon the personal rights of the individual workman under cover of the common law.

4. The English Laws.
5. The German and Continental Laws.
6. The United States Federal Laws.
7. State Laws of the United States.
8. The forces operating toward and against the enactment of Workmen's Compensation Laws in the United States.
9. Probable methods by which such laws will eventually reach the statute books.

I.

It must be quite apparent, even to the casual observer, that the conditions of life and law affecting the relation of Master and Servant have changed during the last generation through no uncertain tendency, and more than by a natural and gradual progression. This progression *per saltem* has been due especially to the substitution for the slow labor of water and of the hand, of rapidly moving machinery driven either by steam or electricity; and generating destructive as well as constructive energies of enormous power, often capable of transmission over paths and distances not contemplated at their point or origin.

To satisfactorily adjust the problems produced by these new and terrible potentials—owned and at the service of employers, and under control largely of employés—we find that not only has statutory law been specialized and complicated, but many of the so-called fundamental principles of common law are no longer found to meet present day exigencies. Certain of those patriarchal axioms by which courts are wont to season the law are rapidly finding their way into the scrap heap, because they do not contain enough of the leaven of justice to keep them wholesome under modern conditions.

Many examples of this process of evolution will readily occur: Thus, the old adage, that "he who handles machinery must take the consequences"—*volenti non fit injuria*—has given way to safety appliance acts, factory laws, shop inspectors, employés' minimum age limits, and other positive methods of enforcing protection of those who earn their livelihood as operators of machinery.

The old "Common Employment" or "Fellow Servant" plea[1] has become worn so threadbare by seventy years of common-law service in the interest of corporate masters, that even the myopic legal eye has

1. First laid down by Lord Abinger in 1837 in his decision in the Priestly case and restated in 1842 by Chief Justice Shaw of Massachusetts in the Farwell vs. Fitchburg Railroad case.

begun to see that the cloak is too meager and too full of holes to longer shelter the overgrown modern corporation against the claim of the employé injured through no carelessness of his own. Many lawyers are even disrespectful enough to affirm that Abinger's decision and Shaw's reinforcement of it were villainously and perniciously bad law from the start. We may concede, perhaps, that such judge-made law may have done very well to defend masters against house servants, or to meet those primitive conditions where every employé saw and was seen by every other, and all worked under the direct eye of the Master; but it can hardly convey exact justice to the family of the dead engineer who is killed through a faulty train order issued by a dispatcher a hundred miles away.

The time-honored doctrines of Assumed Risk and Contributory Negligence come also well within this list of obsolescent formulæ, which a long suffering public is commencing to recognize as not comprehensive or humane enough to the employé to meet the demands of modern justice.

In place of these and many other outgrown fetishes and forms of legal ancestor worship, which passed as "Common Law" among the lawyers of early and semi-agricultural days, we are coming to see that vastly broader and more humane principles must underlie our complicated modern life, if law is still to be the embodiment of justice.

A truer conception of law than any laid down in the medieval and evasive doctrines of Fellow Servant and Contributory Negligence is to be found in the theory that all corporate and public, and many private, rights flow from and are farmed out for the benefit of the community. If a corporation or manufacturer thus becomes merely a public agent, then the injured employé, whose disability will eventually make him or his family a public burden, should—unless grossly and individually responsible for his injury—be entitled to recompense, and the community should bear the charge through an addition made to the original cost of the product turned out by its agent. "If a corporation has no recourse but to replace a wrecked engine, why not reimburse also the injured engineer and charge both items off to maintenance?"[2] These charges in turn must be balanced later on by a slightly higher tariff collected from the community.[3]

As we shall come to see in our examination of the laws of those European countries where this system is actually in force, such a method breeds no litigation, debases no workman, and, by virtue of its wide apportionment, the charge is absorbed unconsciously by those who inevitably have to bear it.

None of these far-reaching social principles have ever received even the scantiest recognition from the eye of the common—or judge-made—

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2. J. W. Lewis, Atlantic Monthly, January, 1909.

3. From President Roosevelt's message of Dec. 4, 1906, referring to the Employers' Liability Act of 1906. "It was a marked step in advance to get the recognition of Employers' Liability on the statute books, but the law did not go far enough. * * * The inevitable sacrifice of life, though reducible to a minimum, can not be eliminated. * * * It is a great social injustice to compel the employé, or rather his family, to bear the entire burden of such sacrifice, when the injury is often the direct result of the legitimate risk of trade. Such risks and burdens should be placed where they belong—on the cost of the completed article, through the medium of an assessment against the employer. Trade risks should not be borne by the workman."

law, which has never looked—when it looked at all—in any direction other than backward and inward.

The best that the common law has ever done has been to recognize the ruthless rapidity and strength of the modern machine by no longer exacting of employé, passenger, bystander, or wayfarer more than the ordinary efforts of the instinct of self-preservation when brought in contact with such appliances. Even these efforts are often conceded to be feeble and unavailing, and the law very properly exacts from the corporate interest, as a price which it pays for rights of way, better power, increased production, and higher speed, a pledge of safety and protection for those who approch its property. The owner or operator of "ways, works or machinery"—who is, after all, as we have seen, but the agent of the public—shall so safeguard them that no properly instructed or right-minded person—whether employé, passenger, or bystander—shall be injured on or by them except through his own wilful and voluntary act. Any employer or proprietor not furnishing such protection is guilty —under the common law—of Negligence.

"By Negligence is meant, in law, the failure to exercise that degree of care which the law requires for the protection of those interests of other persons which may be injuriously affected by the want of such care." (Century Dictionary.)

Claims made under the common law by an injured workman seeking redress in American courts from an employer, are usually based on some form of Negligence of the latter's duty to fulfill this pledge of safety to his employé.

It might seem at a casual glance that it would be easy to recover compensation on such a plea. But the common law has always refused to recognize any of the broader responsibilities which the manufacturer and his product owe to the workman, and insists that all negligence shall be traced to and charged only against its exact source.* And so the employer

4. "By Negligence is meant, in law, the omission to do something which a reasonable man, guided by those considerations which ordinarily regulate the conduct of human affairs, would do, or doing something which a prudent and reasonable man would not do." (American Law Dictionary.)

*NOTE.—Statistics vary as to the responsible source of industrial accidents and their attendant injuries. Most American articles and statistics on this subject are based on foreign sources, since the laws of few American states have reached even the preliminary stage where employers are obliged to furnish casualty information to insurance boards or labor commissioners. A recent American writer states that about 20 per cent. of these accidents are due to negligence of the employer; 30 per cent. to negligence of the workman; and 50 per cent. to unavoidable causes. These later constitute a class of legitimate *risques professional*. Another writer (Warner, Green Bag, 1906), probably deriving his statistical information from the same source, cites the New York Labor Commissioner's Report of 1899 to show that in Austria 75 to 80 per cent. of injuries are due to *risques professionel*, and not to any avoidable negligence. In Austria, only one per cent. of accidents are now assignable to employers' negligence, as against 20 per cent. in Germany, 12 per cent. in England, and an unknown but probably extremely high percentage in the United States.

These are late statistics. Prior to the date when the last very stringent Austrian laws of 1902 went into effect, the percentage of unavoidable accidents out of the total was much less—50 to 55 per cent.

Under a mutual scheme of accident insurance, started in 1897 by the South Metropolitan Gas Company of London, the number of accidents per thousand showed, during the ensuing ten years, a steady decrease of about 4.5 per thousand per year, or from eighty-two per thousand in 1897 to thirty-seven per thousand in 1906. This remarkable decrease in the percentage of accidents was due to two causes: First, an effort by the company to give the employés better protection, and second, the organization of the employés of the various stations of the company into separate branches, with their own assessments and statistics. Improvement in the statistics for any branch resulted in the reduction of the assessment against the members of that branch. As will be seen later on in the discussion of German laws, this detail was borrowed from a similar system established among groups of German employers.

These statistics—if correct—show conclusively, when compared, that both employers and employés are led to eliminate their own percentage of avoidable accidents when brought face to face with the fear of financial loss or criminal prosecution.

responds with various counter-pleas—*tu quoque*—unless a statute expressly forbids them—some just, some unjust, and all legal—which enable him to shake off his pursuer by proving either: that the negligence was not his; or had been contracted for; or was overshadowed by a more proximate negligence on the part of the injured plaintiff; or that the latter knew beforehand of the negligence and assumed the risk of injury through it by remaining in the service.

Various phases of the doctrine of Negligence—with its Pandora's box of troubles for the employer, the workman and the public—will be discussed more in detail when considering the American aspects of workmen's compensation.

The evolution of the English laws relating to industrial accidents furnishes at this point instructive study for those interested in recent efforts to galvanize life into the common law medievalism of American courts.

II.

WORKMEN'S COMPENSATION FOR INDUSTRIAL ACCIDENTS IN ENGLAND.

Under the common law, which in England governed without restriction in these cases until 1880, the employer was liable to the employé for injuries resulting from breach of duty on the part of either the employer or of any one authorized to act for him, even though the employer was unaware of the specific act of Negligence.

Thus, Negligence became—very properly, according to the notions of early days—the basis of the action; but unfortunately it also became the basis of the defense, and the English workman was usually effectually barred from recovery by one of the following pleas, drawn from the abundant stock of English judge-made laws:

1. A plea by which the burden of responsibility was shifted to the shoulders of a neglectful fellow servant—the "Common Employment doctrine," based on the decision of Lord Abinger in the "Butcher's boy" or Priestly case of 1837.

2. The ancient doctrine of "Contributory Negligence," a plea by which the burden was shifted to the shoulders of the injured party himself, provided he had contributed to the accident by the smallest measure of Negligence.

3. The still older doctrine of "Assumption of Risk," with its corollary—*volenti non fit injuria*. "Shortly, the servant must have been willing to encounter the risk, and at his own expense to bear the consequence."[5] Also, if he had not wished to assume the risk of the known Negligence of his employer, he could have quit his service.

Thus the employé, though injured through no fault of his own, was left, to use a somewhat homely expression, to hold the empty bag, and the employer took all the profits of his perilous labor. It may be observed, in passing, that the law in many of those American state courts where common law practice still governs, has never advanced beyond this stage.

To remedy this outrageously oppressive attitude of the English courts toward the workman Gladstone in 1880 secured the passage of the

5. Roberts & Wallace, Employers' Liability, p. 165. 4th edition, English.

Employers' Liability Act. This act was modeled after the Prussian act of 1838, which was originally designed to protect railroad employés only, but which was expanded and incorporated into the German Imperial Code of 1871. The Gladstone Act had all of the vices of its prototype of 1838, without any of the safeguards added either in the German code of 1871 or in those later German laws which followed shortly after the Gladstone act. Whilst this Act specifically abolished the tripod of common law defense just mentioned, it was still based on negligence, and threw upon the employé the heavy and difficult burden of proving the same. In addition, no provision was made to prevent the forestalling of claims by contract, and employers were soon informed by their legal advisers that they could evade their obligations under the Act by contracting with employés to renounce all those rights which the Act intended to confer upon them. Such contracts are still valid in many American states; all railroad employés sign them on entering service, and the document passes among this class of our working men under the often prophetic title of "death warrant."

Had Gladstone been more familiar with the inevitable socialistic trend of German thought, and with the legitimate imperial efforts to guide and counteract that tendency, he would have detected the rising movement which culminated in the great series of German laws of 1881-1890. Even in his own country this movement was rapidly ripening, and he need not have left it to Joseph Chamberlain to enunciate to the English speaking world those far-reaching principles which first had authoritative public utterance in the Kaiser's speeches before the Reichstag from 1881 to 1884.[6]

It was not until 1893 that Chamberlain took the position, in advocating a Workman's Compensation Act, that many industrial accidents were altogether unavoidable either by employer or employé; that they were phenomena inherent to industry; and that their expense should justly be charged against the only factor in the balance sheet entitled to hear it—the cost of the finished product. To Asquith, however, was attributed some years later the apothegm that "the blood of the workman is part of the cost of the product." These utterances, as already noted,

6. A few extracts freely translated from two of the speeches of the Emperor are interesting in this connection as showing the broad spirit of intelligent statesmanship which animated this best and wisest of German rulers: "I have already expressed to you my belief that the remedy for social evils does not lie in the direction of a repression of the social-democratic movement, but is to be sought more justly in the enactment of mutually satisfactory measures which will tend to the advancement of the welfare of the workman. We hold it to be our imperial duty to ask the Reichstag again to lay more closely to their heart this undertaking, and feel that God will have blessed our reign more signally if we could leave behind us the consciousness that we have given to the dwellers in the fatherland a greater security and independence of circumstances through the enactment of laws tending to remedy the situation of those who are legitimately in need of assistance. In our efforts directed towards this purpose we are certain of the agreement of all the federated states and hope confidently for the support of the Reichstag, without consideration of individual or party differences. To find the right ways and means for this provision is perhaps difficult, but it is also one of the highest of our common duties, resting as it does on the traditional foundation of the Christian life of our people. It is believed that a solution of this problem—which the power of the executive alone is not sufficient to achieve—will be secured by bringing the varied activities of our national life together into the form of *incorporated associations of industrial units under state protection and control.* Even by this means, however, it does not seem to be possible to reach the end of our desire without making use of those methods which it is within your privilege alone to employ, but our imperial duties impel us to neglect no means at our disposal to further the betterment of the position of the workman, and the peace and contentment of the working classes, as long as God gives to us also the strength to work."

were foreshadowed a decade before in the Kaiser's speeches from the throne and in the subsequent discussions on the floor of the Reichstag.

Although violently opposed by the large manufacturing interests, the measure of 1893 failed of enactment, not because of this novel position taken by Chamberlain and Asquith, but because the radical element in the Commons very justly refused to accept an emasculating clause, inserted in the House of Lords, permitting employers to nullify the act by contracting with employés to renounce any rights which its provisions might secure to them. Thus, final legislation was postponed until 1897, when a Tory government, with Joseph Chamberlain in the lead, enacted the first experimental Workmen's Compensation Act—the most radical and yet the most conservative industrial law ever passed in England. This Act reached a certain limited number of especially dangerous industries, and under it seven million employés secured relief.

Such experimental legislation was planned broadly on the lines of the German law of 1884-5, and was followed shortly, as in Germany, by the appointment of a commission to inquire into the results of its operation. A brief survey of the commission's report shows that, although the imposition of disability pensions threatened the employers with a constantly increasing burden; and, although the enforcement of the Act terminated their willingness to contribute to any previously existing mutual insurance scheme, there was very little, if any, increase in the cost of the finished product. On the other hand, it diminished very materially the quantity of litigation and its cost to both parties, and led, on the whole, to a much more friendly status between employer and employé.

This report, and the statistics which were collected after several years' operation of the Act of 1897, served in a large measure to stimulate further legislative effort toward a more comprehensive English law, which would not only simplify and embrace previous enactments, but which would give to all workmen the rights which, under the law of 1897, were enjoyed by only one-half of their number. But it is more than likely that this final effort, which saw its successful consummation in the recent Act of 1906, was the direct result of a study by Asquith and other English statesmen of the Imperial Industrial Code of Germany of 1900, which represents the ultimate and most far-reaching effort of the Reichstag.

It is to be noted, however, that whilst the results sought by both laws are practically identical, the English method of approaching their industrial problems differs radically from that pursued by continental governments. There is a manifest effort in the English law to adhere to the older structural forms of administration, and it bears less evidence of that tendency to radical reconstruction which might lay it open to the charge either of paternalism or socialism. In this and in the following ways does the English law of 1906 approach more nearly to a realization of those methods by which we in this country will, in the near future, modify or reconstruct our own system of dealing with industrial casualties.

For example, compulsory insurance has no place in the Asquith Act of 1906, because a system of Friendly Societies, under supervision of a

Registrar's office, was firmly implanted in Great Britain even before the passage of the Gladstone Act. These societies have been found to supply satisfactory working men's insurance, especially when employers make voluntary contributions to the society. Again, both the Chamberlain and Asquith Acts are left to work themselves out automatically on their own merits, with no especial machinery devised for the purpose of carrying out their provisions, other than that of the trade committees and county courts already in existence. These functions of trade committees and county courts have been expanded by the Acts, so that the processes of settlement by arbitration through committees are more definitely legalized. Should no committee exist, either both parties to the controversy, or the county courts, are empowered by agreement to appoint arbitrators, paid by the Treasury, to decide claims for compensation brought under the Act. In the event of agreement failing, either party to the controversy may request the judge of the county court to proceed as arbitrator, in accordance with the usual rules of his court. Should the court prefer not to serve, he is authorized to appoint an arbitrator in his stead. The Secretary of State appoints and pays medical referees, and the right of appeal from the decision of such referees is granted in specific cases. Trial by jury is therefore abolished in cases adjudicated under the provisions of these Acts. Should the employé elect, the way is still open to proceed against his employer by civil suit under the common law, or under the Gladstone Act of 1880.

It will thus be seen that the Workmen's Compensation Act of 1906 is intended to supplement rather than to supplant the already existing legal machinery. In the practical test, however, both workmen and employers have come rapidly to a favorable opinion of the later laws, which embrace in their operation over thirteen million individuals, or the entire working population of the United Kingdom. Out of 2,065 deaths through trade accidents in 1904,[7] only 524 were made the basis of proceedings in the county courts; the remainder were settled by committees or arbitrators under the terms of the Chamberlain Act. Twelve suits were brought for *damages* under the Employers' Liability Act of 1880; the remainder were claims for *compensation* under the Workmen's Compensation Act. Out of 4,223 personal injury claims only 598 were brought before the county courts..

It is at present too early to furnish statistics of the operation of the Act of 1906.[8]

III.

Since the Workmen's Compensation Act of 1906 is the latest word in English law on this subject, and may be supposed to represent the best which Anglo-Saxon industrial evolution can yet accomplish for the work-

7. In Great Britian there are reported annually about 18,000 trade accidents.

8. Recent statistics show that the total number of judges for civil cases in England and Wales is ninety-two to a population of 32,000,000. As illustrating the enormous excess of civil processes in this country, a late report shows that there are in Illinois, for a total population of about 5,000,000, 216 judges, besides justices of the peace and federal judges—a veritable legal debauch. These figures demonstrate more loudly than any argument the crying necessity for some radical change in the adjudication of those industrial claims which now come before American civil courts and juries.

man, the following brief generalized summary of its more important provisions is offered:

Any workman sustaining an injury or contracting certain diseases in counsequence of employment may demand compensation from his employer under this Act.

But should he choose, he may proceed—if the employer has been guilty of personal or wilful negligence—by civil suit under the common law, or under the Gladstone Act; and should he lose his civil suit he may still seek compensation under this Act of 1905.

The Act does not bar proceedings against employers to assess fines for violation of other laws; in this respect the Act bears a strong resemblance to the laws of many continental countries.

Ample provision is made for the adjustment of compensation, either by previously arranged agreement, by arbitration, or by the stipulation of certain approved Friendly Societies.

Arbitrators are appointed by the county courts; medical referees are appointed by the Secretary of State. These fees are paid out of a fund provided by a separate Act of Parliament.

Contracts to relinquish claims for prospective personal injury are void.

Unless the employé is seriously injured, or dead, he or his heirs can not recover for injuries due to wilful or flagrant misconduct.

Employers must make returns to the Secretary of State of all accidents and the compensations allowed therefor.

The plaintiff's attorney—if one is employed—has no lien on the amount recovered, and the county court under whose jurisdiction the arbitration takes place decides his fee.

"Workman" means any person working continuously in the service of an employer, whether by way of manual or clerical work, or otherwise, provided he earns less than £250 yearly. Only those performing manual labor are included if their earnings are over £250, and casual employés, police officers, out-workers, and resident members of the employer's family are excluded.

An examination by a medical referee is a *sine qua non* in all cases occurring under this Act. The examination may be repeated, if necessary, at proper intervals.

No liability for less than one week's disability.

In case of death through accident the dependents of the workman receive not less than £150 or more than £300, the amount paid being estimated on the basis of three years' average wage.

In case of total or partial disability the workman receives up to 50 per cent. of his average weekly earning capacity, but not to exceed £1 per week.

The amount to be paid for partial disability is decided by the arbitrator after taking the opinion of the medical referee and other qualified experts.

Where a weekly payment has been continued for six months or more the employer may elect to cancel the same by payment of a lump sum yielding an income—if invested in the Postoffice Savings Bank—equal to

75 per cent. of the annual value of the weekly payment. This is optional with the employer.

The entire burden of these payments falls on the employer,[9] although the employé may increase his resources by approved insurance, and the employer may protect himself by the same method.

All death payments are made to and handled by the county courts, and the courts are empowered to administer and invest these funds in such manner as they see fit.

Ample provision is made for the enforcement of all the stipulations of this Act and for preference of pension claims in case of insolvency of the employer.

THE QUESTION OF THE EDUCATION OF CHILDREN AFFECTED WITH RINGWORM AND FAVUS OF THE SCALP.*

JAMES NEVINS HYDE, M.D., CHICAGO.

I understand that the subject for discussion this evening is the question, "What Can Be Done to Provide the Children Who Are Infected with Disorders Due to the Presence of Vegetable Parasites (chiefly ringworm and favus), with the Advantages to Be Secured in the Public Schools of the City of Chicago?"

At the outset of the discussion it is proper to recognize the fact that in the scheme of our American civilization, the children, especially of the poor, have a right to education in the public schools. The parents of these children are taxed for this purpose; and those who are not their parents are also taxed and willingly pay taxes in order chiefly that the community in which they dwell may not be needlessly burdened with an ignorant and criminal population. I use these words purposely, calling your attention to the generally accepted fact that the ignorant man is often the criminal. The uneducated child of poverty may be, without much hesitation, regarded as a criminal in embryo. The statistics of our country as set forth by our judges, show that an immense majority of all criminals are males under age, many of them less than twenty years of age, and the mass of them under twenty-five. The child affected with a contagious disease, when such diseases are recognized, is excluded properly from the public schools lest there be a transference of the disease to others. The diseases under discussion this evening are admittedly contagious and highly contagious; and while they do not necessarily interfere with the health, and often are even consistent with a very fair degree of good health, they are no less contagious than the other diseases for which children are excluded from the schools.

The proposition before us is how can we secure these children their rights? and I think it will be admitted that they have a right to public education. In this country no class of persons, whether children or adults, can long be deprived of their civil rights without a more or less emphatic protest. In most Anglo-Saxon countries the sense of justice pervades the consciences of the greater number of those in authority and when their sense of the commission of an injustice to any class is thoroughly awakened, justice is finally awarded to every class in every condition of life. The very helplessness of children makes their appeal the stronger to all fair-minded persons. It remains now to be considered what are the objections to the granting of these rights. I will name four objections and endeavor to make some answer to each:

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9. Thus the English law follows the majority of continental laws in placing the burden—regardless of culpability for the accident—altogether on the cost of the product, *via* the employer. The German law recognizes the necessity for a more equitable distribution of the burden, and charges a certain portion of the expense for the care of those injured, against the Sickness Insurance Fund, to which the employé contributes. Under certain conditions the state also contributes a percentage to these funds, on the theory that the state is thus relieved of an otherwise necessary charge.

* Read before the Chicago Dermatological Society, Jan. 22, 1909.

First. It is claimed that if infected children are permitted to associate with those who are clean, that the latter will be infected by the former, and no objection could be better based. One of the best authorities on this subject in France sets forth the proper dictum in these strong words, "The school inspector should be pitiless. No ringworm of the scalp should be tolerated for a moment and for any reason among school children. In any such event after a brief delay, an epidemic of the disease is inevitable."

This much granted, it may be urged that it is sometimes necessary in the public interest to deprive individuals of their rights, as for example, where a man is deprived of his property because he is creating a public nuisance in the neighborhood where he resides, or because he is doing that to the profit of himself which works injury to the morals of the community. But in none of these cases can an argument be made to apply to such conditions as those here considered for the reason that the man whose rendering establishment is a menace to the community where he lives or whose infected milk may be excluded from the houses of his patrons, if thus prevented from conducting his business can work no further harm to the community, while children affected with ringworm excluded from the public schools are by no means obliterated from the list of menaces to the well-being of the community in which they live, but may and do continue without surveillance to disseminate their disease in other quarters. What is far worse, in consequence of the neglect of their school education, they receive as a result the worst sort of an education; namely, that furnished on the streets. The result is they finally become members of the criminal class. The answer then to the first objection is two-fold: first, children with this disease must and should be excluded from the public schools in the interest of those who are not contaminated; second, in the same interest and in the interest of the community, they must not be excluded from educational advantages.

The second objection sounds plausible enough and seems to embody a reproach to the medical profession. You may retort, "If you want children who have ringworm and favus to be educated in the pubilc schools, your first duty is to heal them, after which they will be received without protest." I desire to emphasize very strongly the answer to this objection: Every physician who knows anything about the accepted methods of treatment of the diseases in question is aware of the fact that unless under very exceptional circumstances, even with the most skillful attention and the most scrupulous care, it is impossible to eradicate from the surface of the scalp with its thousands of hairs and hundreds of thousands of germs (one may say that they even amount to millions) every spore of the microsporon or achorion. More than a quarter of a century ago when I sat on the benches as a medical student, I saw in the clinics of New York City men of my profession struggling with this same problem, a struggle which is conducted with no better success to-day than then. Bodin, of France, has written, "the elements of this disease, deeply infiltrated as far as the root-extremity of the hair, find in the hair-pouch a sure and inviolable asylum, for no parasiticide, whatever be its form and whatever the condition in which it is employed whether solid, liquid, or gaseous, can penetrate to the depth of the follicle by reason of the anatomical disposition of the hair-shaft in its pouch."

I find some authors in this connection making distinction between cases which are acute and which are chronic. I regard this distinction as one not without possibilities of danger. In practice, as a matter of fact, all these cases are chronic and that which seems to be acute to-day may be chronic next week or the week after. The problem is a very simple one. If we remove all the hair filaments from the scalp with the *x*-ray, a brilliant success is often secured. But many parents are wholly unwilling and strenuously object, first to the complete removal of the hairs; and second, to exposing their children to the fancied dangers of the *x*-ray. In the absence of the ray treatment, no medicament, penetrating however deeply and however destructive can be promptly effectual. Therefore, in the most of the cases, the slow and tedious methods have to be adopted.

How slow and how tedious these methods are can best be appreciated by some reference to the measures which are adopted in the continent of Europe as well as

in our own country as to the time required to secure such relief that the children can be given a clean bill of health and restored to the school-room. Beginning with Great Britain, I quote the language of Sir Malcolm Morris with reference to ringworm: "This disease if left to itself will last for years but as a general law, to which there are but few exceptions, it works itself out as adult life is reached. By proper treatment the disease can generally be cured within a reasonable period, but the practitioner will do well in a given case not to commit himself to any definite limit of time. In cases of no extraordinary severity, the treatment may relieve the condition in from three to six months; in certain cases for a year or so; and in exceptionally obstinate cases, for a much longer period. The small spored fungus which causes about ninety per cent. of the cases of ringworm met in London is far more difficult to deal with than the large spored parasites, a circumstance which accounts for the failure in England of methods found successful elsewhere." Crocker, of the same country, writes as follows: "Every case is curable but it is difficult to say exactly how long the treatment may last. In recent cases six weeks to three months is a short time, and twelve months a fair time, but some cases take longer even in the most experienced and skillful hands, and a large proportion of cases reported as cured in a month or six weeks, are only examples of unskilled observation."

Turning to France, I quote Bodin with respect to favus as follows: "In France three months of vigorous treatment, consisting invariably of epilation with the employment of parasiticides is followed by a period during which the child is under surveillance and the new hairs are permitted to grow. During this period, however, parasiticides are continuously employed. The treatment is then frequently renewed. The certificates after cure, however, are good for only one month. A definite certificate is given after three months' more delay." But there is no writer in any country whose name is more completely identified with the disorders due to vegetable parasites than Sabouraud of Paris. In quoting him I believe that I am citing an authority whose opinions are given weight throughout the medical world. Sabouraud writes: "In certain cases, fortunately rare, nothing can give an exact idea of the tenacity of the disease. Children eight years affected may have at least a dozen hairs betraying spores. Even when the disease has not attained this extreme longevity, the termination of the process sometimes requires fifteen months and even two years, especially if the treatment at the onset has been imperfect. One can easily picture to one's self the discouragement and tax upon the patient or parent watching a disease which at the same time is both so malignant and so rebellious."

It appears then that in the populous centers of Europe, as in this country, even with the best of treatment a child may be for months affected with the disease unless that mode of treatment be pursued which it is rare to secure in public practice both on account of the expense and the time and the supervision requisite. Further, it appears that while these exceptional cases may require but a few months of treatment, in some cases the disease lasts for years and it is only with great caution after repeated and careful microscopical examinations and after a further delay of months that the child can be definitely described as absolutely free from the disease. In this connection I remind you that the microsporon disappears as a rule when puberty is reached or soon after; and that favus may persist for a lifetime. We have, therefore, these evidences that children affected with ringworm and favus, may and probably should be, excluded from contact with sound children for one or more years.

The third objection I cite is based upon the alleged infrequency of the disease in our own city. The number of infected children has been said to be so small that it is a negligible quantity. It is urged that no great harm is done by keeping a few children out of school for a few months. Responding to this objection, I urge first that if there are twenty children deprived of their school rights by reason of the causes under discussion, harm is done. We have no right to deprive ten children in the city of Chicago of the rights which they have

conceded to them in our scheme of government and civilization. The second argument in opposition to this objection has no less force. The number of children affected with ringworm and favus is considerably larger than will be believed by those not studying the statistics of the disease. Let me say at the outset that these statistics have an importance which the statistics of typhoid fever and other diseases limited in their career do not possess. The typhoid patient of to-day may be dead next year or alive and well. The boy or girl with ringworm or favus this year may be one year from now as unfavorably situated with reference to contagion and school privileges as to-day. I therefore have no hesitation whatever in citing the cases which we have on record for the last two years as holding good probably for the estimate of to-day.

Sabouraud writes that "in the city of Paris by virtue of many conditions which might be enumerated, such as the size of the population in children (150,000), the small number of physicians who are school inspectors, the extreme difficulty of the diagnosis of the disease at the onset, its indefinite duration, its extreme contagiousness, the frequency with which certificates of immunity are furnished by physicians who really know nothing of the diagnosis of the disease, the increasingly frequent use of implements in common such as scissors employed without disinfection—in brief, for these and other reasons the number of children attacked with ringworm has of late years increased to proportions which are truly formidable with respect to which the public opinion, public authority, and the physicians themselves have no idea." Sabouraud reports that "the number of children affected with tinea tonsurans in Paris amounts to several thousands. The Bureau of Public Assistance alone takes annual charge of 1,800 patients. The school which is not inspected may in the course of a few months have one-third or one-half of its pupils contaminated. A contaminated school which is not under surveillance may become in the course of years a permanent focus from which the disease may radiate."

At the Central Free Dispensary of this city and at my own clinic which is furnished with its material from the dispensary, during the years 1907 and 1908, we had fifty cases of tinea tonsurans and twenty-one cases of favus, making a total for the two years of seventy-one cases. I have before me a record of the names and addresses of thirty-five children treated for both diseases in this institution during the years named above and it is interesting to know that while the oldest of the children whose age is recorded at seventeen, one case; thirteen, two cases; and eleven, one case; the others were all of school age.

The population of the city of Paris in 1900 census amounted to 2,714,068. It will be seen how closely the population of Chicago as estimated at the present time compares with that of the French capital. It is idle for me to suppose that the statistics of the Central Free Dispensary includes one-tenth of the cases of ringworm and favus occurring in the city of Chicago. I regard it as a small estimate to set the number down as over one thousand, especially in view of the fact that Sabouraud estimates the number in the city of Paris, even allowing for the greater population of that city, as amounting to thousands—1,800 under observation of one public service alone. There are reasons for believing that there are more cases of ringworm and favus in Chicago than in Paris, which I name as follows:

1. The slums of Chicago are reported in Scotland Yards, London, as worse than the slums of either London or New York.

2. The population of the lowest social class in Chicago is mixed; that in London and Paris is much more homogeneous and of one nationality.

3. School inspection and care of children with ringworm and favus is conducted in the capitals of Europe by men who have the opportunity to devote the most scrupulous attention to the cases in hand and to use the most approved treatment.

My belief is that there is as much neglect, filth, and improper treatment of children of the submerged class in Chicago as in any city of equal population in the entire civilized world.

The last objection is one with which as medical men we have little if any to do. It is the financial question. I believe that the school board is not now able to take charge of all children of school age who are fit to enter the school-room. If we asked the board to do more than they are doing at present, to provide, that is, a school or separate floors in a school where children with ringworm and favus can be educated, we presume they will respond that the expense is too great and that they have not the funds wherewith to meet it. To this, as medical men, we can only say that the state and the city have to discharge their full duty to all who justly claim aid and protection.

I am not a prophet nor the son of a prophet, but I can assure those who are interested in this question that once public attention is thoroughly aroused first, as to the danger of these infections to sound children; second, to the even greater danger of the encouragement of the development of criminals by the present procedure, the end sought to be attained will certainly be reached. In the long run, the public may be trusted to solve the problems which are presented to them; first, in the spirit of fairness, and second, with that sterling common sense which I believe to be one of the best characteristics of our American people.

SURGERY OF THE BRAIN AND ITS COVERINGS.*

CASSIUS C. ROGERS, A.M., M.D.

Professor and Head of the Department of Surgery in the Chicago College of Medicine, Medical Department of Valparaiso University.

CHICAGO.

Since the day of antisepsis, surgery has been so perfected that the abdominal cavity is entered without hesitancy, and frequently by the unskilled. Although handicapped by inexperience and incompetency, many lives have been saved and invalids restored to health. Thus, while abdominal surgery has been giving such relief and satisfaction, surgery of the skull and brain has not received proper attention and little progress has been made except by a very few. The fault has not been with the surgeon who advised operation, but with the profession who discouraged and refused to support what they consider heroic measures, liable to be followed by uncertain results.

For many years the profession has been of one opinion in regard to many diseases of the abdominal cavity. Patients with intra-abdominal hemorrhage have been operated upon at once as soon as a diagnosis was made, while patients with hemorrhage from the meningeal and cerebral vessels have been permitted to lie unconscious for days. (I know of one case living for 30 days with complete hemoplegia and unconscious, no radical efforts made nor advice given to relieve the symptoms.) This surely can not be on account of the discouraging results obtained by operating these cases, for Cushing's experience has been as follows: "From a study of a large number of records it is estimated that 90 per cent. of the meningeal apoplexies prove fatal if unrelieved surgically, 60 per cent. of them dying within the first twenty-four hours. Of a large series of operated cases, 67 per cent. recovered, a percentage which would be larger were it possible to secure prompt intervention before the onset

* Extract of paper read at the North Central Illinois Medical Society, Dec. 1, 1908.

of medullary symptoms in the patients in whom the extravocation takes place rapidly." (Keen's Surgery, page 205, vol. iii.)

In extradural hemorrhage, I consider the operation less dangerous than a laparotomy with a patient equally ill. Why, then, is operative interference discouraged, and why so many failures to relieve? Simply on account of technic and skill, too small an incision and skin flap made, a trephine used and a small area of the dura and brain exposed, and nothing abnormal found, although the small opening was made over the location suggested by the focal symptoms, after correct measurements had been made according to Reed or Krönlein, no consideration having been made for peculiar shaped skull or brain developments. The areas are not constant as to external measurements. The central sulcus (Rolandi) around which the motor area is located may vary an inch or more from the supposed location suggested by external measurements. This being true, a trephine opening an inch in diameter may miss entirely the area sought, the small opening permitting only a limited examination of the brain. Nothing abnormal is found and the operation discontinued and no benefit derived.

A surgeon derives no more benefit from such an operation than he could through a stab wound in the abdominal wall in search of an intestinal perforation. What surgeon would be satisfied in diagnosing perforation of an intestine by examining a nuckle of intestine that might have found its way through a wounded abdominal wall? In abdominal surgery we must see what we are doing; the same rule holds true in brain surgery. We must take into consideration the variable location of the area and operate accordingly. An opening must be made large enough so that the brain and its coverings can be easily and quickly examined.

Figure I represents Reed's method of locating the Rolandic area.

Figure II represents the function of the different areas of the brain surface.

Figure III illustrates the size of skin flap that should be made (minimum).

Figure IV illustrates method of making initial opening with chisel and hammer.

Figure V illustrates Dahlgren's forceps used for culling bony flap.

Figure VI represents method of breaking base of bony flap. Chisels inserted at base of flap and held by assistants while pressure is made at the upper part: pressure towards brain. This prevents injury of vessels of dura at base by spiculæ of bone by irregular breaking.

Figure VII illustrates skin and bone flap reflected, exposing the dura, giving one free access to anterior middle and posterior meningeal vessels, also enabling one to expose the entire hemisphere by introducing the finger between the skull and dura.

Figure VIII illustrates dura reflected in searching for intradural lesions.

Figure IX illustrates incision for posterior flap of scalp and skull in operating on occipital region.

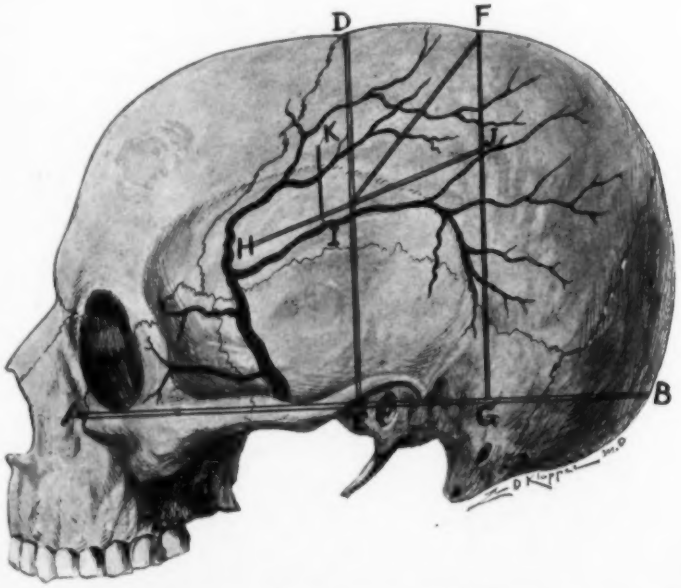

Fig. 1.—Reid's method of cranio-cerebral localization. A B, base-line; E, preauricular point; E D, anterior perpendicular line; G F, posterior perpendicular line; H J, main part of Sylvian fissure; I J, horizontal limb of Sylvian fissure; I F, Rolandic fissure.

Figure 2.

Figure 3.

Figure 4.

Figure 5.

Figure 6.

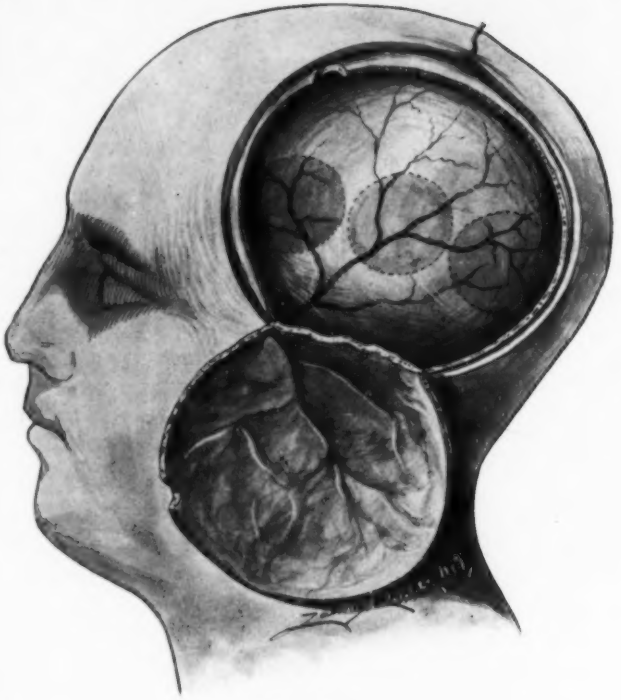

Figure 7.

Figure 8.

Figure X shows instruments used in controlling hemorrhage, forceps for scalp and gauze for packing diploe to stop hemorrhage of skull.

I have found the shock no greater from such an opening than following the opening with a trephine, and I have found diseases that I could not have elicited through a small opening. Experience has convinced me that every case of apoplexy should be considered surgical that lives long enough to be prepared for an operation and competent skill secured. The operation belongs to the same class as strangulated and irreducible her-

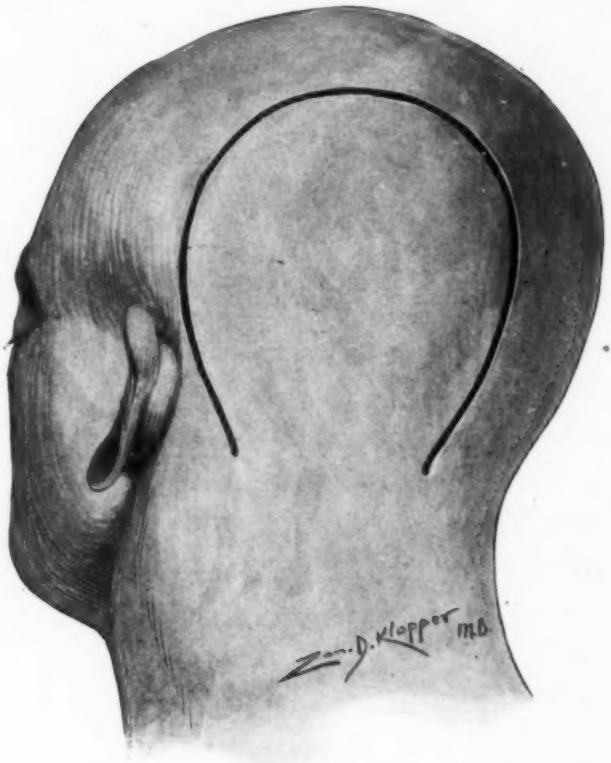

Figure 9.

nia, intestinal obstruction, severe intra-abdominal hemorrhage, etc. The prognosis is as good, the recovery quicker and the results as satisfactory, the patient being equally as strong before the affliction. Intradural lesions may be difficult to locate and sometimes impossible; in these cases the decompression operation may give great relief, a large plate of the skull being removed, allowing the formation of a hernia in the case of tumor or abscess. I saw in Trotter's clinic in London excellent results following decompression.

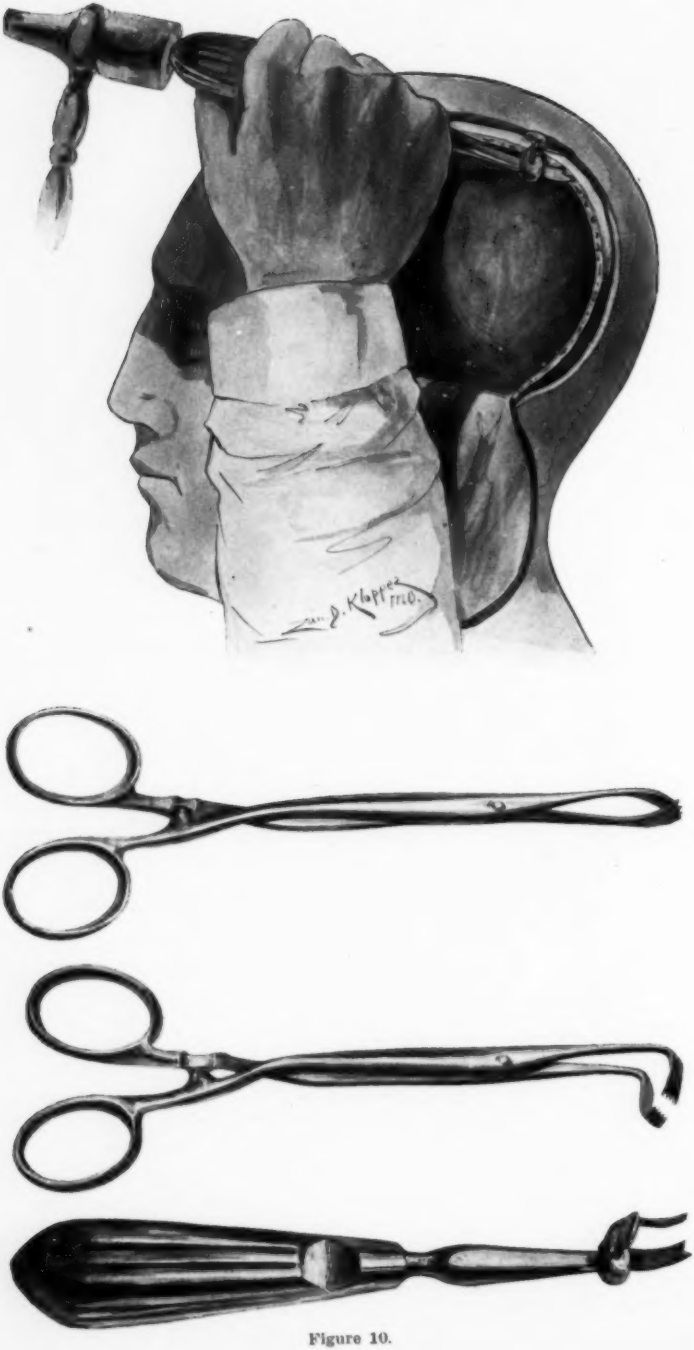

Figure 10.

First, a girl had become suddenly blind; a diagnosis of brain tumor was made; an operation was performed, but no tumor could be located; decompression operation was performed, and sight was restored in a few days. It is sometimes possible when nothing can be found at the primary operation to locate and remove a tumor after a hernia has developed.

One great fault in cranial surgery is conservatism; delay is disastrous. How many poor epileptics could have been cured if surgery had been resorted to early will never be known. Injury, unconsciousness due to shock, consciousness regained and gradual loss of consciousness, should spell hemorrhage to every one of us, and surgical relief at once advised.

True, many of these cases recover for a time; some permanently, others develop epilepsy due to adhesions of the dura and brain, the result of irritation from a blood clot. Many of these cases then seek relief, but, alas, it is then too late.

SUMMARY.

1. Operate early.
2. Make bone flap large enough so that a large area of brain can readily be examined.
3. Symptoms suggesting operation after injury:
    1. Unconsciousness following injury.
    2. Return of consciousness.
    3. Gradual loss of consciousness.
    4. May be rise in temperature; may be normal or subnormal.
    5. Deep sighing respirations.
    6. Slow or very rapid pulse.
    7. Involuntary twitching or moving of hands, face or leg.
    8. Pupils tell but little.
    9. In abscess, temperature is often subnormal unless the meninges are involved.
4. Choked disc is often first sign of intracranial pressure.
5. Symptoms of tumor or abscess may be present, but not found at primary operation. In these cases decompression should be performed.
6. Epilepsy following injury is the result of delay and the case should have been operated upon before symptoms developed.
7. If decompression has been performed, and epilepsy follows, closing the defect only increases the frequency of the attacks.

ILLINOIS MEDICAL JOURNAL

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OCTOBER, 1909.

PELLAGRA.

This disease, which has heretofore been practically unknown in America and was supposed to be prevalent only in southern Europe, has undoubtedly made its appearance in Illinois and should therefore be studied by our practitioners, as the best authorities are confident that many manifestations of the disease have been overlooked in the past and designated and treated as forms of skin disease. While there has been and still is a great deal of controversy as to the causation of the disease, there seems to be no doubt that it may be traced to *bad* corn. Furthermore, it is not ergotism, and Allbutt believes that it belongs rather to the class of food poisoning; strictly, perhaps, it should find a place in a sub-section of ptomaine poisoning. In this connection it is worth recalling that, especially in the year 1908, there was a considerable quantity of inferior corn put on the market by Illinois farmers.

Pellagra is chiefly a disease of middle life, but children are attacked not infrequently. It stamps its most signal feature upon the skin. The eruption is usually preceded by constitutional disturbances, of which the first symptoms are headache, depression of spirits, sleeplessness, paresthesias, cramps, palsies, vague but often severe pain in the spine and joints, vertigo and dyspepsia. In the later stages diarrhea sets in. The

eruption is an erythema, which chiefly affects the parts exposed to the sun. The eruption is most frequently symmetrical. The skin is swollen and tense, and is the seat of burning or itching sensations; petechiæ are frequent, and bullæ appear, which on rupturing leave indolent ulcers (pellis agra-ulcer of the skin). In about a fortnight from the beginning of the attack the erythema subsides, and desquamation follows, leaving the underlying skin thickened and stained of a light sepia color. The symptoms usually subside in the autumn, to reappear, however, in the following spring. The attacks thus occur regularly every year, the thickening and pigmentation being increased on each occasion in the first four or five years. Afterward the integument undergoes atrophy and becomes dry and wizened, as in old age. This atrophy is especially marked on the backs of the hands. The nails and hair show no change.

When the patient has thus been the subject of the disease in its recurring attacks for three or four years his depression of spirits deepens into melancholia of a severe and irremediable kind.

Palsies form part of the ordinary course of the disease; the knee-jerk may differ on the two sides; but in the large majority of cases it is increased; it is rarely absent. Tendon reflexes are often to be detected in the forearms. The gait, though uncertain, is never ataxic; it rather assumes the form of spastic paraplegia. Ankle clonus, though often present, is not invariable. These paretic symptoms are commonly preceded by tremor. Sensation is virtually unaffected.

Together with this degeneration on the side of the nervous system the whole man also deteriorates. Flesh and strength fall away, the mental faculties wane, and life is but too often prolonged to the dregs, to be cut short at last by colliquative diarrhea. With each successive year, to use Dr. Creighton's words, the patient becomes more like a mummy; his skin is shriveled and sallow, or even black at certain points; his bones protrude; his muscles waste; his movements are slow and languid, and his sensibilities grow more and more obtuse.

Dr. C. H. Lavinder of the Public Health and Marine-Hospital Service has recently made the following addition to our knowledge of the treatment of the disease, which is worthy of consideration. He states that the prognosis must invariably be considered as grave and that complete recovery can seldom be assured. Reliable statistics on the subject in the United States are practically limited to asylum cases, and give a mortality of 67 per cent. It must be borne in mind, however, that asylum cases are undoubtedly the more advanced and hopeless ones, and for that reason will give a mortality much above the average. Lombroso gives statistics of mortality cases in Italy in 1883 and 1884, showing a mortality of 13 per cent., whereas Wollenberg gives Italian statistics for 1905 showing a mortality of a little over 4 per cent. The disease resembles tuberculosis, both in that it is an insidious and chronic condition and that much depends upon early diagnosis and treatment, prognosis of early cases being far better than advanced ones. The importance of this is apparent when it is considered that the disease is an intoxication and that it is probably associated with diseased corn or corn products used as food.

Predisposition is believed to be an important factor in this disease. Lowered physical resistance, mental worry, insufficient food, bad housing and alcoholism are supposed to render one more susceptible.

In Italy laws have been passed regulating the use and storing of corn and its derivatives, institutions have been established for the care and treatment of pellagrins, improved agricultural methods are encouraged, and assistance is given to the sick in many ways by the government.

In the treatment of patients Lombroso recommends a liberal diet; in some cases he uses baths and cold douches, believing them to be of benefit in certain cases with nerve and skin manifestations; he has found arsenic a valuable remedy and sodium chlorid of service.

Some authors have reported good results from the use of the newer arsenical preparations, atoxyl and soamin.

Transfusion of blood from cured cases to the sick has been tried and may prove of value.

It can readily be seen that there is an immense commercial side to this subject which should be taken into consideration by the profession and the appearance of the disease stopped at the very earliest possible moment.

Up to this time the disease has only been detected in two of the hospitals for the insane, but it is probable that if the disease really exists in these places cases will be found in other centers, especially the county poor farms.

PROFESSOR (?) BRAUN INDICTED.

Professor Braun, Himself, Herself, Itself and Themselves seem at last to have come to grief, the authorities of the U. S. Court at Springfield having finally taken up the subject, and an indictment is said to have been drawn against Braun recently at the session of the court held in Quincy. The details, such as have been given, show the existing condition of affairs at Braun's headquarters at Bloomington. It seems that the multiple Braun was the head of at least three different corporations, the common object of all of which was to fleece the innocent sufferer. Braun himself seems to have been the chief promoter, securing the names of the sick and ailing by writing to the postmasters in the various towns and offering prizes to bright boys and girls who would give him lists of names of sufferers. He then advertised to give free treatment to all who apply to him when he visited each particular city. When the patient called, however, he was informed that $15.00 was necessary for eight personal treatments, which he was told was practically giving away these treatments. The first personal treatment was administered by Braun himself. After that his representative did the business, or the patient was told it would be necessary for him to go to Bloomington for treatment, or treatment was given by mail. The mail order treatment was valued at $5.00 per course. Some of the questions asked were: "Do you get hungry before meals?" "Do your thoughts wander, etc.?" The applicant specifies the hour when he is to think of Professor Braun, and

Typical cases of pellagra. Photographs furnished by Dr. V. H. Podstata, Superintendent of the Illinois Northern Hospital for the Insane.

Braun was supposed to be doing some ponderous mental process at this time. When the mental therapy swindle failed, the patient was turned over to a medical company, and in case payments were not forthcoming the Manhattan Collection Agency (also one of Braun's schemes) was used to worm the money from the victim.

Altogether this is one of the most picturesque swindles that has come to our knowledge, and THE JOURNAL congratulates the people of the State that it took occasion to call attention to this subject in an editorial some two months ago. In all probability Braun's particular energies will be suppressed as a result of this agitation.

PURE FOODS.

Notwithstanding the defeat of the advocates of absolutely pure food at the Denver meeting, we feel called upon to state our belief that the profession as a whole have not changed their opinion of the stand taken by Dr. Wiley. While it may be true that certain food products are made none the worse by a small amount of benzoate of soda, yet to let down the bars and permit its promiscuous use will certainly be a very great mistake.

The pure food laws enacted by Congress have been universally commended and have placed the United States in the forefront of the world upon this matter. Undoubtedly vast commercial interests have been affected by these laws and will make every effort to have them modified at the expense of the health of the consumer. This is all the more reason for the medical profession to present a united stand for purity of the nation's food.

We should welcome a discussion of this subject in the columns of THE JOURNAL, especially as one of the members of the Remson Commission is a resident of Illinois.

THE RELATIONS OF THE URINARY ACIDITY.

In a recent issue of the *Medical Record*, Dr. Henry R. Harrower, of Chicago, introduced an interesting "Study of the Urinary Acidity and Its Relations." The time has passed when moistening a slip of litmus with urine suffices as a test of its reaction. The increasing demand upon physicians for exactness and the importance of the results accruing from the examination of the urine indicate that the estimation of the acidity is most essential, and that such a test should invariably be made as a part of every routine.

The index of acidity varies directly with the metabolism of the body. The production of acids in the cells must exert a decided influence upon this factor. In addition, Dr. Harrower asserts certain products of intestinal putrefaction when absorbed into the blood and eliminated by the urine increases its acidity. Comparing the results of a large number of urinalyses with the clinical findings in those passing the specimens

gives conclusive proof that many unpleasant symptoms and even dangerous conditions are associated with, if not actually caused by high urinary acidity and the metabolic conditions occasioning it.

In a series of 250 analyses the average acidity was found to be 60°, the lowest being 10° and the highest 274°. The other findings showed that 83 per cent. of the series evidenced indican usually in large quantities, in 80 per cent. the urea was diminished quite materially and about 25 per cent. showed casts and traces of albumin.

From these findings the writer concludes that there must be a distinct association between highly acid urine and autointoxication due to intestinal putrefaction, and that this combination of conditions may be a direct factor in the production of urinary casts as well as a predisposing factor in serious kidney lesions.

This data is of interest to the physician because of the aid that it may afford him in obtaining results and directing his therapeutic procedures, since the urinary acidity varies directly with the alkalinity of the blood, and upon this important factor depends the general health and the vital powers of the body. In chronic diseases, especially those that are so frequent as tuberculosis, rheumatism, neurasthenia, and the hundred and one other more or less obscure conditions that are associated with auto-intoxication, there is usually a very high degree of acidity and a marked increase in the number of acid units eliminated daily. With the proper modification of the causal conditions and the resultant change in the urinary findings the chances for recovery are greatly increased, because of the relief occasioned to the body cells by the elimination of these acid poisons which have been hindering their work.

The study of this subject is still in its infancy and it is to be hoped that the future will see more time and energy expended on this important subject.

In closing, the doctor remarks: "The time spent in making quantitative acidity tests and the routine more than repays the general practitioner in the indication for treatment he will receive from this information, and more satisfactory results derived from the better adjusted treatment."

County Secretaries' Page.

A certain secretary of one of our county societies is very much troubled over the matter of whether he should seek the application to membership of some of his neighbors who are or who have been guilty of gross violations of the code. The question is, is it wise to try to reform some of these old offenders by getting them to join the society and then trying to show them the error of their way or shall we ignore them entirely? We suggest that if such are willing to come in, by all means, take them. Often you will be surprised to find out what decent

fellows they are, after all. At any rate, they are more susceptible to proper influences in the society than out of it.

We shall be glad to publish any answers to this query if some of you fellows have anything to say on the subject. Tell us what your experience has been.

Judging from the accounts of the papers read at the meeting of the Missouri County Secretaries we should say that the "Show Me State" is alive to the issues of the day in organization work. We have no information in regard to the number in attendance, but if the spirit of enthusiasm and energy shown in the papers read becomes general we can predict a prosperous year for our Neighbor Society on the West.

"Upon the secretary, more than upon any other member of the county society, rests the burden of keeping the work of the society up to the highest pitch of usefulness, and the members instinctively expect the secretary to exhibit an active, keen and lively interest in everything they themselves attempt to do. If the secretary fails to do this the interest in the work of the society immediately drops, just as the engine slows down when the steam is shut off; for the secretary is usually the motive power of the society machinery, and if he fails to perform his functions faithfully, cheerfully, and conscientiously the other members fall into a state of indifference that spells ruin to the society."

"The great value of THE JOURNAL as a means of giving permanence to the labors of the secretary and to the influence of the society has not been fully appreciated by all county secretaries, for many of them do not give prominence to the work of their societies through the pages of THE JOURNAL."—E. J. Goodwin in August *Jour. Missouri State Med. Ass'n.*

In regard to the publishing of our society proceedings in THE JOURNAL let us make every endeavor to have at least one such paper prepared for each meeting with that particular object in view. It will be an additional stimulus to good work and will materially aid in developing our own men. Many societies have a general understanding that all papers are expected to be handed in to the secretary as soon as read. This furnishes the secretary an opportunity to give his society some publicity which will usually result in increased interest and pride in the scientific work of the organization.

One of the branches of the Chicago Medical Society is arranging for a series of ten minute talks on the History of Medicine to precede the regular program. If the speakers are sufficiently familiar with the essential facts of each epoch to be discussed, so as to be able to talk freely and to the point, we predict that this will prove a very interesting feature of the meetings.

Has the Committee on Uniform Blanks for Secretaries anything to report? Roberts, Flint and Feigenbaum are the members of this committee.

All matter for the Secretary's Page of THE JOURNAL should be in the hands of the editor of this department before the 10th of the month preceding the date of issue, otherwise we may have to use "Boiler Plate" to fill up.

C. H. L.

Correspondence.

A WORD OF PRAISE.

BEARDSTOWN, ILL., Sept. 8, 1909.

To the Editor:—Sometimes it is a pleasure to know our efforts are appreciated. Permit me to tell you in my opinion the present issue of *The Illinois State Medical Journal* is the most interesting and most valuable to the general practitioner that has appeared in a long time. It is chuck full of good, solid, practical matter. With kindest regards, I am,

(Signed) Sincerely, R. H. GARM, M.D.

APPEAL TO THE MEDICAL PROFESSION OF THE WEST AND SOUTH.

Up to the present time there has not been a concerted effort made to collect and preserve historical data in regard to the origin, evolution and personnel of our profession in this part of our country. The result of this delinquency has been the total loss of much material that should have been preserved, especially pertaining to medical schools and societies and biographical matter in connection with the practitioners and teachers of medicine of bygone days. A good deal of material of this character is still obtainable if a systematic effort is made to locate and preserve it. It is in the possession of individuals, families and private libraries and will eventually be lost. THE WESTERN ASSOCIATION FOR THE PRESERVATION OF MEDICAL RECORDS was organized in May, 1909, for the purpose of collecting the historical and biographical records of the profession of the West and South. We wish to preserve anything and everything pertaining to Western medicine and medical men and are anxious to enlist the active help and support of every member of the profession who is in sympathy with our aims. We want every one to become associated and identified with the work of our association. There are no fees or obligations of any kind. We have made arrangements with the Lloyd Library, Cincinnati, Ohio, for the proper housing of the material collected. The latter will be systematically arranged, catalogued and properly preserved so that it can be made available for research-work. We are particularly anxious to obtain:

1. Medical journals published in the West and South prior to 1880.
2. Medical books and pamphlets written or published in the West.
3. Manuscripts and autographs of early Western physicians.
4. Old diplomas and other documents of a medical character.
5. Proceedings of medical societies.
6. Reports of hospitals and other medical institutions.
7. Catalogues and announcements of Western medical colleges of all "schools."
8. Biographies and portraits of Western physicians.

9. Information and material of any kind pertaining to medicine and medical men and affairs in the West.

10. Curios of a medico-historical character.

All contributions should be sent in care of the librarian. In view of the fact that we are performing a labor of love and have no funds, our friends will readily understand why all contributions sent by express or freight should be prepaid so that no expense may accrue to the association. The necessary expenses of the association are at present being met by voluntary contributions of its organizers.

May we not count upon *your* active help and support? We would like to hear from every member of the profession who is interested in the proposed work.

C. A. L. Reed, M.D., Chairman.
Otto Juettner, M.D., Secretary.
A. G. Drury, M.D., Librarian.
710 West Eighth Street, Cincinnati, Ohio.

MEDICAL FEATURES OF CONFERENCE OF CHARITIES' PROGRAM.

Physicians will find several interesting medical papers in the program of the Fourteenth Annual Convention of the Illinois State Conference of Charities and Correction, to be held in Peoria, October 9 to 12, 1909. The medical topics, the names of those who discuss them and the dates are as follows:

Dr. William L. Russell, State Inspector State Hospital Service for the New York Commission in Lunacy, subject, "The Clinical Organizations of State Hospitals," Monday, October 11, session beginning at 2 p. m.

Dr. James Stewart, Medical Supervisor St. Louis Public Schools, subject, "Medical Supervision of Public Schools," October 10, session beginning at 8 p. m.

Dr. J. W. Pettit, Medical Director Ottawa Tent Colony, subject, "The Economics of Tuberculosis," October 10, session beginning at 8 p. m.

Dr. William H. Wilder, Professor of Ophthalmology, Rush Medical College, Chicago, and member of the Illinois Commission to Inquire into the Condition of the Blind, subject, "The Prevention of Blindness," October 11, session beginning at 9 a. m.

Other papers of collateral interest to physicians are:

Prof. James H. Tufts, of the Department of Philosophy of the University of Chicago, subject, "Housing of the People," October 9, session beginning at 8 p. m.

Mr. Charles F. F. Campbell, Cambridge, Mass., Superintendent Industrial Department, Massachusetts Commission for the Blind, and vice-president National Society for Workers Among the Blind, subject, "Occupations for the Blind;" Monday, October 11, session beginning at 9 a. m.

George W. Jones, Superintendent School for the Blind, Jacksonville, subject, "Education of the Blind," October 11, session beginning at 9 a. m.

John Davis, formerly Superintendent of the Peoria County Almshouse, subject, "Public Care of the Poor in the Almshouse," October 12, session beginning at 9 a. m.

Sherman C. Kingsley, Superintendent United Charities of Chicago, subject, "Needed Social Legislation," October 12, session at 2 p. m.

We hope that a large number of physicians, especially from the territory near Peoria, will attend the conference and take part in the discussion of the papers. The conference is a non-political, non-sectarian organization supported by an appropriation by the State Legislature. William C. Graves, of Springfield, executive secretary of the State Board of Charities, is president, and Dr. Frank P. Norbury, of Jacksonville, recently appointed superintendent of the Kankakee Hospital for the Insane, is secretary.

COUNTY AND DISTRICT SOCIETIES

COOK COUNTY.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, June 2, 1909.

A regular meeting was held June 2, 1909, with the president, A. C. Cotton, in the chair. Drs. E. C. Seufert and V. L. Sheets read a paper on "Polycythemia with Enlarged Spleen and Chronic Cyanosis," which was discussed by Drs. C. L. Mix, B. W. Sippy, and in closing by Dr. Seufert. Dr. C. A. Parker read a paper on "The Wet Dressing in Surgery." Adjourned.

DISCUSSION ON THE PAPER OF DRS. SEUFERT AND SHEETS.

Dr. Charles L. Mix:—About two years ago I looked up the literature of polycythemia and found less than one hundred cases recorded, only a few of these having been seen in this country. One case has since been reported at length by Engelbach, of St. Louis. The cases reported by Osler, and by Cabot and McKeen represent most of the cases reported in this country. An article by Anders in the *American Journal of the Medical Sciences* about a year ago added little to our knowledge on the subject. These cases being very rare, it is well worth going a long way to see one; and we are indebted to Dr. Seufert both for this opportunity and for his thorough presentation of the subject. For those who wish to look up the subject, it is well to know that the disease is described under various other names, such as erythrocytosis, hyperglobulism, polyglobulism, cyanosis, splenomegaly, and polycytosis.

I have seen a case of polycythemia which was interesting because of its course. I saw it in Springfield in consultation with Dr. Kreider. The woman was first seen by Dr. Kreider in 1901. She then complained of symptoms which resembled those ordinarily found in chlorotic anemia. There was ringing in the head and ears, headache, much dyspnea on slight exertion, especially on climbing stairs, deficiency in weight, and a very miserable and rather run-down subjective feeling. The blood count showed 5,700,000 reds, and 105 per cent. hemoglobin. Things went from bad to worse until November, 1906, when I saw the patient. On that occasion she was still complaining of intense headaches. I was struck by her peculiar color. She had the appearance of having been running very hard, but was not out of breath. There was cyanosis, particularly about the ears and lips, and her eyes were very red. We looked for an enlarged spleen and found it. The spleen was as hard as in cases of splenomegaly, harder than in many cases of malaria. It suggested the existence of some chronic infectious process. The blood examination showed 13,180,000 reds, 9,333 whites, and 115 per cent. hemoglobin. There was a disproportion between the amount of hemoglobin and the number of red cells. Practically all cases of polycythemia show a comparative reduction in the hemoglobin per corpuscle. On Dec. 4, 1906, the reds numbered 10,600,000, the whites 8,666, with a hemoglobin percentage of 120. The reds were counted by the hematocrit, which gave a larger number than the blood count, which was also made. The whites numbered 10,400, with 120 per cent. hemoglobin, Dare, and 125 per cent., Gowers. A differential count showed 17 per cent. of small lymphocytes, transitionals 1 per cent., eosinophiles 1 per cent., and polymorphonuclears, 81 per cent. There is generally a relative increase in the polymorphonuclears and in the lymphocytes, although in Dr. Seufert's two cases there was an increase in eosinophiles; and such increase in the polymorphonuclears again suggests an infectious process.

In January, 1908, the patient gave birth to a child. In the meantime she had been put on *x*-ray treatment, splenic exposures, as in cases of leukemia, and she was given arsenic. There was no real reason for this treatment, but we tried it, and whether it was the arsenic or the pregnancy or the *x*-ray, I do not know, but nevertheless the number of red cells decreased to the normal, and in April there were 4,600,000 red cells by hematocrit and 5,010,000 by count. The urine was always negative, except for a relative increase in the amount of urea. Some time after the child was born the reds again increased in amount, so that in June, 1908, they numbered 7,696,000, the whites 7,833, with 108 per cent. hemoglobin. To-day the hemoglobin percentage is between 110 and 115, the whites number 8,166, and the reds 9,740,000, according to a report just received from Dr. Kreider. Since the birth of the child she has therefore been getting worse. She has not been receiving any *x*-ray treatment of late.

Her previous history is interesting. She was married at 24. Just before that time she had a lot of boils all over her body, especially under the armpits; yet when these boils were lanced by a physician no pus was found in them. Evidently there was some infection which produced considerable glandular enlargement and led a physician to think that they were boils. Finally they went away and never reappeared. In 1904 she had measles, contracted from her little girl. One thing noted at the time by everybody was that she was exceedingly red, undoubtedly because of the existence then of this disease. She has never had any severe illness, except this glandular trouble and the measles. She never had any menstrual disturbance, but had one miscarriage between the first and third pregnancy. Her normal weight was 137 pounds, but when I saw her she weighed only 111 pounds, and last summer her weight fell to 105.

Subjectively, she complains chiefly of headaches, which began in 1903, and were very frequent and painful. She also was much troubled with vertigo, which began in August, 1906, and of a grinding in her ears, which was worse with each pulsation of the heart. These noises appeared, disappeared and reappeared. She also had palpation of the heart, associated with coldness of the hands and feet. Her appetite was abnormal; she could not get enough to eat. She also complained of symptoms which might be regarded as neurasthenic. She always felt as though the sword of Damocles was hanging over her head. Her moods were affected to quite an extent, so that her spirits would get low, and she would become very much depressed. She never complained of burning sensations in the skin, except in the face, or of paresthesia, although occasionally the left side of her left foot itched at night, which probably was a subjective matter.

When I examined her I found the heart slightly hypertrophied in the left ventricle, the aortic second sound accentuated slightly. The right half of the thyroid and also the isthmus were slightly enlarged. The pulse tension was not high, if anything a little low,—estimated by guess and not by instrument. The spleen was rather large, coming down about halfway to the umbilicus, and was hard. An interesting fact was that during the course of the *x*-ray treatment the spleen diminished so much in size that it could scarcely be palpated. It increased in size later when the symptoms reappeared.

One cannot help but feel that there was and is now some infectious process at work. I believe that polycythemia is an infection, but just what infection, I do not know. The splenic enlargement, the leucocytosis and its character, the subjective disturbances and the pathologic findings all lead one to such a conclusion. The enlargement of the thyroid, I think, is accidental, and does not stand in any causal relationship with the disease.

The treatment is unknown. The prognosis is very bad. Although some cases have come to autopsy, nothing has been added to our knowledge of the disease, so that it must remain to some extent, as far as pathogenesis is concerned, an unknown affection; and as far as treatment is concerned, we are practically absolutely ignorant. In the cases that come to our notice, we shall for the present be obliged to do the best we can along empirical lines.

Dr. B. W. Sippy:—Drs. Seufert and Mix covered the ground so well that there is little to add, except in the line of diagnosis. My patient was 29 years old and came to me because of some supposed stomach trouble. His family history was good, except for insanity in the mother. He had had pneumonia at 11 and was very susceptible to taking cold. In giving his history he laid particular stress on stomach and bowel trouble. He had diarrhea and symptoms of hyperchlorhydria; total acidity was 107, free hydrochloric acid about 85. He had from twelve to twenty attacks of diarrhea during the year; sometimes associated with severe headaches and nausea. He had been treated for conjunctivitis because of the intense redness of his conjunctivæ, a symptom seen in many of these cases. When I first saw him his face was very red, his ears, fingers and hands were cyanotic. On lying down the redness and cyanosis increased in intensity. Palpating the abdomen I found an enlarged spleen. This together with the marked cyanosis caused me to suspect polycythemia. A blood examination was made at once which revealed 7,640,000 red cells, 10,000 white cells and 120 per cent. hemoglobin. He gave a history of shortness of breath and considerable muscular weakness. Heart and liver negative. The spleen came down two and a half inches below the costal arch. Vomiting was present now and then; the appetite was good, but he had been on a rather limited diet for a year because of his stomach trouble. Under the influence of an approachable diet he gained in weight from 118 to 130 pounds, and improved very much subjectively. The red cells have increased in number until now he has 9,632,000 with 130 per cent hemoglobin. He is able to do his work. The spleen has not enlarged perceptibly, and although his blood findings are worse he has improved very much subjectively.

The diagnosis is not difficult. Cases must be excluded in which there is incompetency of the heart with cyanosis and polycythemia; emphysema associated with general passive congestion and other conditions causing local blocking of the circulation and an increased number of red cells. The number of red cells may vary from 6 to 15 millions or more per cubic millimetre. The individual corpuscle is usually somewhat poor in hemoglobin but the total number of red cells being increased a high hemoglobin estimate results. Most cases show a moderate leucocytosis.

The blood findings, the enlarged spleen, the redness and cyanosis of the face, lips, ears, nose and fingers without apparent cause, make a very striking clinical picture. It is noteworthy that except for the blood findings many of the manifestations of polycythemia resemble those of splenic anemia; for example, in both diseases there is present dizziness, headache, ringing in the ears, nausea, vomiting, inaptitude for work, pulsating blood-vessels and enlarged spleen. Another similarity in these strikingly different diseases is that in both there may be the same reversion to the fetal type of bone marrow. Some doubt that the complexus of symptoms now described under the heading of polycythemia constitutes a distinct pathologic entity. A distinct clinical picture is presented, however, which runs a rather definite course. In some cases the apparent disease terminates fatally in three months, in other cases it continues longer. Dr. Mix's case has continued eight years. My patient has been ill four or five years and is subjectively better to-day than when first seen, nearly two years ago. I have not advised *x*-ray treatment because he is apparently doing well and as yet we do not know just what damage the *x*-ray may do.

Dr. Seufert (closing the discussion):—I said nothing about the treatment in my paper, as I expected that that would be brought out in the discussion. In both my cases arsenic was given, but without any benefit, and in one case in which the *x*-ray was tried, no good resulted. The inhalation of oxygen in the case that terminated fatally gave occasionally wonderful temporary relief for about twenty-four hours. Blood-letting was not tried, but I should think that it would give temporary relief. Several of Turck's patients were bled, five to six hundred c.c. of blood being withdrawn, and were relieved for at least two or three months. The patient I showed you to-night had very severe pain

in her finger-tips for several years, a symptom which has not been mentioned before. It disappeared after a severe uterine hemorrhage. This case has run for about twenty years. My first patient developed a goiter twenty-four years ago, and cyanotic spots about twenty years ago. I have noted that in most of the long-standing cases the spleen and liver are more enlarged than in recent cases. In my first case death resulted from gradual exhaustion. She had no children. The second patient has had five children, one of whom I treated for endocarditis and chorea. A peculiar thing is that the disease occurs mostly among Jews.

CHICAGO DERMATOLOGICAL SOCIETY.

Annual Dinner, Jan. 22, 1909.

The annual dinner of the Chicago Dermatological Society occurred on January 22 at the Chicago Athletic Club. The subject chosen for the evening's consideration was: "What Can Be Done to Provide the Children, Who Are Suffering from Skin Disorders Due to the Presence of Vegetable Parasites (chiefly ringworm and favus), with the Advantages to Be Secured in the Public Schools of Chicago." Dr. James Nevins Hyde presented a paper on the subject which was discussed by Drs. Pusey, Anthony, Ormsby, Fischkin, Baum, Quinn, Lieberthal, Schmidt, Bishop, Kessler, and McEwen.

DISCUSSION ON PAPER OF DR. HYDE.

Dr. W. C. Pusey:—I shall only take time to consider briefly the two topics to which we are especially asked to direct our attention. First, the frequency of ringworm of the scalp in our practice; second, the time required for cure. I recall only two cases of ringworm of the scalp that I have seen in my private practice during the last year. In my public practice I have seen it much more frequently and I should think a fair estimate of the number of cases that I have seen during the last year would be a score. I believe Dr. Hyde's estimate of the number of cases in the city is moderate. As to the prospects of radical cure in these cases, I do not recall a single instance in public practice where I would be willing to swear that the patient had been radically cured of ringworm of the scalp. I understand that with unending patience and persistence these cases can be cured, but the affection is apparently so trival in the class of patients in which we frequently see it, it is almost impossible to treat it with sufficient thoroughness to be sure that the disease is eradicated.

Dr. Henry G. Anthony:—I desire to limit my remarks to a consideration of the prophylaxis of the small spore varieties of ringworm, excluding the large spore varieties which are derived from cattle.

There are two varieties of small spore ringworm; first, a form derived from cats, and possibly from dogs, which produces small spore ringworm of the scalp in children, and in adults leads to the development of cent-sized round or oval superficial scaly patches which are not circinate. They are located on the glabrous portions of the body and are usually not recognized as ringworm.

The prophylactic measures to be observed in this form are: To trace the infection to the diseased cat (which is seldom done because of the prevailing belief that no small spore ringworm is of animal origin), and to dispose of the affected animal, thus preventing the spread of the disease to other children.

The other variety is the microsporon Audouni which cannot be inoculated into animals. It spreads from scalp to scalp in children. It is most common in asylums for children. Orphan asylums, half-orphan asylums, and day nurseries are veritable incubators of the disease. Some of these institutions are never free from cases. The children attend the public school. The directors of some of these homes have adopted the reprehensible plan of dismissing from the institution any inmate who becomes infected after admission which, of course, disseminates the disease through the community. I have recently seen a girl, six years of age, who acquired a ringworm of the scalp in an institution after a residence there of one year. As soon as the disease was detected she was dismissed and the mother placed her in a day nursery where she is now scattering the disease.

The prophylactic measures which should be employed in the second variety of ringworm are: No child affected with ringworm of the scalp should be permitted to attend public schools without wearing a cap. All affected children in an institution should constantly wear caps; they should be provided with separate sleeping apartments, baths, washstands, and toilet articles. There should be a regular inspection of the institutions to supervise the cases. The dismissal of children who acquire the disease in institutions should be prohibited. I have checked the spread of the disease in two institutions by the use of the cap.

In the dispensary of the Children's Memorial Hospital, 1,068 children have been treated last year. There are twenty cases of small-spore ringworm of the scalp, which represents with a fair degree of accuracy the proportion of cases. These came from all parts of the city.

Dr. Oliver S. Ormsby:—The few remarks I shall make refer chiefly to the subject of ringworm of the scalp in children. The contagiousness of the disease is well known, but its seriousness is not generally appreciated by either physicians or the laity. The symptoms in a given child at a particular time do not present a serious aspect, but owing to the prolonged period of time consumed, to the constant care and attention which has to be given for its eradication in the individual, and also to the many precautions which necessarily must be observed to prevent other members of the family from becoming infected, the management of a case of ringworm becomes a matter of no small moment to the family concerned.

To realize the severity of the disease, its persistency, and the difficulty presented in its eradication one has only to see an epidemic of ringworm in a public institution of children. Several years ago with Dr. Hyde, I visited an orphan asylum for the purpose of examining the scalps of a few of the children. We discovered that more than a score of the inmates were infected with the disease and more than a year of constant and careful work was required for its complete elimination. Some two years later, the disease was re-introduced and when we were notified, we found twenty-four out of thirty-six children examined had already been infected. A careful microscopic examination is required in all cases, both in making the original diagnosis and in determining whether or not a case is entirely well. When a case is clinically well, one can very often, by careful search, find some infected hairs which show the fungus abundantly on microscopic examination and which, if left, would reinfect larger areas again. The treatment of the disease is very unsatisfactory. Anyone who has treated many cases in the public dispensaries can certify to the fact that they are only exceptionally entirely relieved. Improvement in the condition causes the child to be kept away and sooner or later the disease spreads. The happy cases are those in which a pustular folliculitis ensues which causes the hair to fall and thus relieves the disorder.

Sabouraud's statistics, recorded in the *British Journal of Dermatology*, in June, 1906, relative to the radiotherapeutic treatment of ringworm in Paris appear to show great improvement over other methods of treatment. He sums up the situation by saying that before the institution of this treatment in certain public institutions of Paris, about one hundred and ten patients were discharged annually as cured; that in 1903 and 1904, with radiotherapy, three hundred and twenty-seven were cured, and in 1905, the number increased to five hundred and four. Formerly a child thus infected occupied a hospital bed about two years, while at the time of the new treatment only a few weeks sufficed. This permitted the relinquishment of several hundred beds for other purposes and represented a large monetary saving to the state. It is a treatment, however, not devoid of danger and cannot be recommended here especially in public practice.

The cases of favus that come under my observation are not numerous. At the West Side Hospital Dispensary, with Dr. Mackey, I had three cases during the year and two others occurred in private practice. One of these was demonstrated before this society showing an ideal result from radiotherapeutic treatment. I believe that in favus this treatment is advisable in selected cases.

Dr. E. A. Fischkin:—I want to apologize for not having prepared myself with facts and figures for this discussion. I did not intend to participate in it, but the force and tenor of Dr. Hyde's address induces me to respond with a few words.

I wish to state first, that the estimation that there are a thousand children in Chicago afflicted with vegetable parasitic scalp diseases, is not overdrawn by far. In the one dispensary of the Jewish Aid Society, located in the heart of the foreign district of Chicago, I see at least a hundred children per year suffering with these diseases. There is not a day of service in which I do not see one or two cases of tricophytosis capitis and occasionally one of favus. The breeding places of these diseases are, as was pointed out here to-night, the orphan asylums of the city. They harbor often a number of tricophytic children unrecognized and untreated. I had this experience in an orphan asylum of this city which shelters about a hundred children, for which I am the attending dermatologist. The superintendent of the asylum claimed not to have a single case of ringworm in the house, but when, after he had sent to me the first case of tricophytosis capitis I asked him to bring in all the children with scaly scalps, I could select fifteen which were suspicious, and on examination of the hairs, spores were found in every case.

The question is, what shall be done with these children? The treatment of tricophytosis is comparatively successful in private practice. The cases which I can recollect now have been cured in six to ten months. One can attain a complete cure with applications of the usual parasiticides, provided the parents can be induced to employ the necessary patience and perseverance. The *x*-ray treatment has given me good results in a number of cases, especially in older children and where the disease was confined to single patches. I have used it on an average of fifteen to twenty exposures and I have never attempted Sabouraud's heroic treatment to cure a patch with one saturated exposure.

The question is what shall be done with the children of the poor? It goes without saying that these children are a source of infection to others, and that it is a duty of the city government as well as of the medical profession to protect the community. But how shall it be accomplished? Shall we force these children into isolation hospitals, or into the wards of Cook County Hospital? I believe that here the eternal rule of justice must be the basis of our action. The individual is an integral part of the community, and no measure can be undertaken to protect the community which shall sacrifice entirely the interests of the individual. For a disease which takes at best many months and sometimes years to eradicate, such hospitals must be hospital schools, as in London, where the children may get not only treatment but also education, and where the city employs not only physicians but also teachers. As long as the city of Chicago has no means or no desire to establish such institutions, we physicians have no place where to send these children. I believe, therefore, that our health commissioner has done the best there was to be done under the circumstances. The employment of school nurses is a step toward the solution of this problem. The deplorable results of treatment of these diseases in public practice is mainly due to the unwillingness or incapacity of parents to carry out the tedious and wearisome methods of treatment. If the city will continue to employ these nurses, who can be trained in the treatment of scalp diseases, and who from time to time can bring hair specimens to the health department laboratories for examination, it will help a great deal to eradicate the parasitic scalp diseases.

Dr. David Lieberthal:—In my private practice I have seen not more than a dozen cases of ringworm and two cases of favus of the scalp, while in my clinical and asylum work the number of ringworm cases has been considerable. Favus was found in a small minority.

About nine years ago I accepted the position of dermatologist to two homes for orphans and homeless, in one of which at that time, among one hundred and fifty inmates, sixteen cases of ringworm of the scalp were detected. Of

these twelve were treated with *x*-rays. (I believe the first treated by this method.) An average of ten exposures was required to produce a cure in ten of these. For various reasons this method was not further employed.

In the other institutions an epidemic of nearly thirty cases occurred which could be traced to one case which entered upon presentation of a physician's certificate of health. Since then a very strict examination of every applicant is made, especially regarding the condition of the scalp, by my very able associate Dr. Michael. Upon the slightest suspicion the little candidates are referred for my personal examination and admitted only if found healthy. And yet cases do occur within these homes which no doubt are infected outside. In each home about fifty children are brought for admission every year and among these there are always cases of ringworms and here and there one of favus. The rule not to admit either is strictly followed. These patients are boarded out and receive medical aid at various dispensaries. How good or quick are the results obtained may be easily imagined if we consider that the caretakers of these children are as a rule, stupid and incompetent. I have found it a wise measure to isolate these children for two or three months after apparent cure, because within that time, even though the most careful examination revealed no remnant of disease, recurrences have taken place.

I agree with Dr. Anthony that children becoming afflicted with either tinea while inmates of a home should be kept there until cured. I am certainly in favor of isolation of these patients. The question before us to-night is how can they best be cared for without being a source of danger to others and how may those of school age enjoy the benefits of proper instruction? There should be established a boarding school exclusively for such cases where they may have medical care and nursing and at the same time receive the education to which as future citizens they are justly entitled. I am not in a position to say how the means for the support of such a school could be raised, although I am perfectly certain that the governing bodies of some of the charitable homes would be glad to contribute to its maintenance. Thus they could keep such patients out of their institutions and at the same time be assured of their proper care.

Dr. William A. Quinn:—In regard to the subject under discussion, I will say that it has been my lot to come in contact with a goodly number of these cases. I believe the hot-bed of ringworm will be found in that part of Chicago of which Hull House forms the center. This is a region very thickly settled with the foreign element. Most of the cases which come to my services at Rush Medical College are brought or directed there by the visiting nurses from that district; while in my service at St. Joseph's Hospital on the north side I have seen but two cases in a year, both coming from a different locality. As regards favus, most all of the cases are to be found in the so-called Ghetto. I have at present under my care a boy, twelve years of age, who is suffering from favus and has not attended school all told, one whole year. At the beginning of each term he has started to school and before a month is dismissed. He has gone the rounds of the various hospitals and dispensaries without results and the only education he has is what he gets while selling papers on the streets. Now, I believe it would be advisable for the board of education to select some school in the 19th ward and set aside one or two rooms in which these children could be segregated during the school hours. Suitable treatment could be administered by the visiting nurses and at the same time the children could receive some little education.

Dr. Louis E. Schmidt:—My experience is entirely limited to private practice. In the past ten years I have seen but three cases of favus. Only one was treated with *x*-rays and this one was cured. As a matter of interest, I might state that the young man threatened me with a lawsuit. However, in time he was himself convinced of the good result. The two other cases remained uncured and passed from observation.

Ringworm of the scalp was seen only twelve times in the course of ten years. Four of these cases were in one family. In no instance did the patients

remain under my observation until cured. They attended school and were probably a source of contagion for many years.

Dr. R. W. Bishop:—While I see during the year quite a number of cases of favus and ringworm of the scalp, I could not report them without duplicating, as they are sent to Dr. Fischkin and recorded under his service. Nearly all are from the district known as the Ghetto.

Dr. J. B. Kessler, of Iowa City, Iowa:—I do not believe those present can appreciate the clinic we have had this afternoon as I can; I am the only one in our small city who makes any pretension of knowing anything about dermatology—when I have a case out of the ordinary I have to dig it out myself—while you can secure the opinions of some of the best dermatologists in the country at your clinical meetings.

In reference to ringworm and favus, I can sanction what has been said by several, that ringworm which has existed on the scalp for six months or longer is rarely, if ever, cured until Nature cures it; in recent cases our treatment is usually more successful. I had occasion in 1902 to investigate the so-called "barn itch." A young farmer came to me complaining of an eruption on his wrist, circular in outline, elevated, having the appearance of a small mushroom; there were no scales, but pustules marked the site of the lanugo hairs. I visited his farm and procured some of the asbestos-like scabs and crusts from the neck of several calves; examination showed the spores of the ectothrix variety of ringworm to be present.

I am of the opinion that the most frequent source of ringworm in the agricultural districts is to be found in calves, mangy dogs, and cats. Hence the advisability of subjecting the owners to a fine, as they would owners of sheep, cattle, swine and horses otherwise diseased.

Dr. Ernest L. McEwen:—In summing up the discussion of the subject of the evening, I shall consider briefly three questions, which I believe cover the essentials of the entire question and which have been answered in part at least, in the several speeches we have heard.

The first is: What has been shown to be the need? In other words, how can we say that there is a problem with respect to the education of children with infectious scalp conditions? The answer has been given in no uncertain manner to-night. Ringworm and favus are extremely contagious disorders among children and unrestrained contact of an infected child with other children is certain to lead to a rapid dissemination of the disorder. Further, both conditions, and especially favus, are extraordinarily difficult of cure. Were it not for the possibilities of cure held out by radiotherapy, one might stand all but helpless in the presence of a well-developed case of favus of the scalp. It is therefore just and right that, in the interest of the vastly larger number of sound children, those who are infected with these diseases should be barred from the schools. As to the number of cases in the city, it seems to me that Dr. Hyde's estimate is low. It is to be regretted that accurate statistics are not at our command. It is highly probable that a large number of cases could be found in the various asylums and homes for children which never become a part of the statistics. We may also assume that a number of mild cases are never presented for treatment. It is certain that the total of cases in children of a school age is not less than given in the estimates to-night, and may possibly be twice as great.

The second question is: What is the duty of the public toward these children as regards education? Though they are afflicted with a contagious scalp disorder which shuts them out of the schools, their right to a public education stands unchanged. And if the community fails to provide this education it is guilty of a double failure of duty; first, to the children themselves, and secondly, to society as a whole. For the social body cannot afford to allow any of its component individuals to develop into defectives or delinquents. Every case of favus among the children of our poorer classes represents such a possible outcome. A thirteen-year-old boy was brought recently to the Central Free Dispensary with a severe favus of the scalp. His disease began when he was six

years old and he had never been permitted to enter school. He is now a stolid, stupid boy with only a short time left for possible schooling, and is destined to join the ranks of the defectives. Another boy about the same age, bright and active, has not attended school for several years because of favus. He roams the streets, and has already appeared before the juvenile court for some minor offense. He is getting the training that will make him a delinquent. If our community is to protect itself, it must provide education facilities for these irrespective of their incontestible right to such schooling. But unfortunately nothing is being done. It is to be regretted that Superintendent Cooley, who was invited to take part in this discussion, is not with us this evening.

The third question is: What can we do toward solving the problem? is not so easily answered. Probably the first important step is to determine as nearly as possible the actual number of these cases in the city. This will require co-operative efforts on the part of the dermatologists and the city health department. Notification of scalp ringworm and favus should be made compulsory and the health department should insist upon the rule. Special attention to these conditions should be given by the school inspectors. A monthly report to the health department of cases to be found in all the orphan asylums and foundling homes should be demanded, and, to prevent spreading, these institutions should be compelled to isolate and to care for children infected within their walls until cured, as has been sugested this evening. By establishing a rigid system of notification, and by systematizing the reports, a reasonably accurate knowledge of the number of cases could be obtained. By charting the cases, an idea of their geographical distribution would be made possible. Then it might appear feasible, as has been suggested, to establish a school for these children in some district especially affected, on some trunk-line street. The suggestion of Dr. Quinn, that such a school on Halsted street in the Ghetto region would probably be accessible to a large majority of the cases, is a most excellent one. The school board should provide the building, equipment, and teachers. The instruction could not follow a strictly graded system, because of the varying age of the children. This, however, is a minor matter; some form of instruction could be given which would be valuable to all. Co-operating with the health department, the dermatologists of the city could take charge of the treatment of the children; the details of method could be worked out at another time.

Such an outline of action seems to me feasible. It means, of course, plenty of work for the skin specialist, and for the health department, and some outlay on the part of the school authorities. But when we consider what these efforts may mean in the future lives of hundreds of children, we should feel ourselves fortunate that we can render such service to those in need.

ENGLEWOOD BRANCH.

At the meeting of April 6, 1909, Dr. John B. Haeberlin presented a specimen of congenital cystic kidney. Dr. Robert Zeit gave a pathologic report of the specimen. A symposium on anesthetics, followed with papers by Drs. A. D. Bevan, on "The General Administration of Anesthetics;" H. D. Peterson, on "The Use of Ether;" John A. Meek, on "The Use of Chloroform;" F. K. Ream, on "Nitrous Oxid and Oxygen Gas," and Edison B. Fowler, on "Local Anesthesia."

CONGENITAL CYSTIC KIDNEY. REPORT OF A CLINICAL CASE.

JNO. B. HAEBERLIN, M.D., CHICAGO.

History.—J. J. Q., male, aged 35 years, of Irish parentage; born in New York; single; occupation, plumber. Both parents are dead and the cause is entirely unknown. He has two brothers, one of whom is epileptic and the other is in an insane asylum. Has two sisters, both apparently well. One sister gives a history of having had fibroids removed. So far as can be elicited from the patient there are no known family diseases. So far as he remembers he was in good health through childhood and young manhood. Fifteen years ago, when patient was 20 years old, he contracted malarial fever which lasted for four months, and

which, he stated, was an extremely severe type. He lived in Baltimore during this attack. One year following this he developed typhoid fever, which also was of severe type. The typhoid lasted approximately three months. Three years ago he was confined to a hospital in San Francisco with an extremely severe attack of stomatitis following a drinking bout. As to habits, he used alcoholic drinks to excess for a period of about ten years—from his twentieth to his thirtieth year. Used tobacco in excess until about two years ago. From his twentieth to thirtieth years he was extremely irregular, leading a dissipated life during the greater part of the time; his sprees were frequent.

During the past three years, since his stay in the hospital at San Francisco, he has been in a condition of marked invalidism. Previous to this, for a period of six or eight years, he did not feel perfectly well but was at no time confined to bed. When he was in the San Francisco hospital he was informed that he had chronic Bright's disease and an enlarged spleen. Since that time he has been suffering a great deal from headaches, dizziness, loss of appetite and nausea, languidness, palpitation of the heart, dyspnea and general inability to do manual labor. During the past three years he has also noticed that the amount of urine has been excessive and he has had three distinct attacks of hematuria, the last attack having occurred about six months ago, and was severe enough to confine him to bed and cause the attending physician to give him a very unfavorable outlook. These attacks of hematuria lasted about a week. These symptoms greatly increased until his headaches became very severe, they becoming severe and constant. During the last four months vomiting has set in, which later became persistent. Along with the vomiting he has twitching of the muscles, particularly those of the upper extremity, neck and face. Yawning has developed and has become very distressing. He has also complained of the so-called "dead" hands, the absence of feeling in the hands, the sleeping of the extremities. His headaches, vomiting and twitching became so severe that on Jan. 2, 1909, upon recommendation he was removed to the hospital for treatment. Under treatment for his uremia and chronic Bright's diseases he apparently improved, so much so that he left the institution Jan. 23, 1909. After leaving the institution he was comfortable for a number of weeks, and on February 8 I again saw him. From February 8 until February 15 his symptoms of uremia gradually increased until the termination of Feb. 15, 1909.

Urinalysis shows changes that are typical of a chronic interstitial nephritis; abundant albumen and granular and hyaline casts present. The specific gravity ranged from 1001 to 1008. During the treatment of hot packs the urea, which ran on an average of from 0.2 to 0.5 per cent., gradually increased until it ran a little over 1 per cent. There was also an intermittent pyurea. During his stay at the hospital there was no hematuria.

On blood examination the findings indicate a simple secondary anemia. The hemoglobin registered 53 per cent on Dec. 20, 1908, and gradually increased until at the time of his discharge from the hospital it registered 80 per cent. The white blood corpuscles registered about 12,000 upon a number of examinations, the red blood corpuscles from 2,500,000 to 4,000,000. Differential count was not made.

The patient presents an anemic pallor. The skin has a yellowish tinge. The mucous membrane of the mouth and the conjunctiva of the eye appear markedly anemic. The general nutrition is poor. The eyes show at times a slight external strabismus when the attention is relaxed. The reflex is too light and accommodation apparently normal. The ears are negative. The tongue has a fur coatting. The teeth are wide apart, particularly the upper set, and are very irregular; the distance between the teeth is extreme. On examination of the hard palate it is found extremely deeply arched and the patient unconsciously is a mouth-breather. Examination of the neck is negative. On examination of the chest the sternal protrusion is so pronounced as to be striking. Its elevation is extreme. On either side of the sternum there is a lateral groove. The respiratory excursion is not so marked on the left side as on the right, and the apex beat is visible outside of the nipple line and an interspace lower than normal (sixth),

On palpation vocal fremitus is present on the right side and increases a little on the left side to the sixth or seventh rib. Lower than this it is absent. The apex beat can be felt full and strong. The closure of the aortic and pulmonary semilunar are palpable. Percussion is negative on the right side. On the left side there is impaired resonance above the sixth rib and dulness below. The pericardial area of dulness increases laterally one finger's breadth to the right sternal border, and two fingers' breadth to the left of the nipple line. Auscultation over the right side of thorax is negative. Respiratory sounds are not so marked on the left side, both anterior and posterior. There is a marked systolic murmur at the apex of the heart transmitted above and to the left with accentuated second sounds. The aortic and pulmonary sounds are apparently equal in intensity.

Inspection of the abdomen shows marked bulging of the left lateral hypochondriac region. The left costal arch shows marked bulging. Veins over abdomen marked. On percussion the liver dulness is negative. Over the dulness in the left lateral region there is absolute dulness which can be outlined over area extending from seventh rib well down into the pelvic inlet. There was at times tympany over this area of dulness. On palpation the lower border of tumor could be felt distinctly and its anterior border partly outlined. The surface did not feel irregular. During the last week of the patient's life the size of the tumor apparently increased. Tumor did not fluctuate, was hard, no notch could be felt and it was not movable.

Examination of the genitalia was negative. There was a slight edema of the lower extremities. The extremities were always cold and at times cyanotic. The osseous system was normal, except the misshapen thorax. The glandular system was normal. The nervous reflexes were normal. Mind was quite normal. Speech was always slow. Motor impulses below normal. Sensation negative. The heart findings have been enumerated. The vessels in the extremities were somewhat hardened. Beading of the vessel walls could not be determined. Examination of the skin was negative.

Diagnosis.—The urinary findings indicated a chronic interstitial nephritis. The vascular findings were those of a mitral insufficiency with the resulting changes; a heart that also showed the results of insufficient kidneys, and a generalized arteriosclerosis. The tumor was the perplexing condition; its position was one that indicated kidney or spleen. If it were kidney it could have been a hydronephroma or a congenital cystic kidney. Sarcoma and endothelioma of the kidney would be excluded by its chronicity. Hydronephroma fluctuates, this did not fluctuate. If it were a splenic tumor things would indicate that it would be a primary splenomegalia. The points in favor of kidney involvement were, first, the urinalysis with hematuria, urinary findings being that of a chronic interstitial nephritis; the anemia; the absence of the splenic notch in the tumor; the non-mobility of the tumor. If an irregular surface could have been palpated it would also have been in favor of kidney involvement. Tympany at times indicated an overlapped colon. The points in favor of the tumor being of splenic origin were, first, the position of the tumor was one that well could have simulated the spleen, in fact, in large tumors of either the kidney or spleen their anatomical position is practically alike with the exception that the kidney is overlapped by the colon. In a primary splenomegalia we frequently get an anemia of the secondary type. The age of the patient and the chronicity of the enlargement might well occur in primary splenomegalia. The congenital cystic kidney is rarely found in an adult so old, especially a tumor of this size. The antemortem diagnosis lay between a congenital cystic kidney and a primary splenomegalia. The antemortem points in favor of a congenital cystic kidney were the family history of degeneracy and the stigmata of degeneracy which were presented on physical examination along with points already enumerated. The things omitted, which might have been of some aid in diagnosis, were the *x*-ray, the aspirating needle, the catheterization of the ureters, and lastly, but not advisable in this case, the exploratory incision.

The removal of the tumor was the only thing permitted, and upon removal it was found to weigh 8 pounds and 12 ounces, and the size was 14 by 7 by 4½

inches. The kidney was handled and examined for a period of 24 hours before Professor Zeit examined the specimen. Many delicate cysts were ruptured and much fluid lost during this interval. The specimen is stationed at the Northwestern University Medical School's Pathological Laboratory.

PATHOLOGIC REPORT.

F. Robert Zeit, M.D., Chicago.

The diagnosis of the kidney specimen presented to our laboratory is "congenital cystic kidney. The kidney weighs 3,000 gr. (normal 150 gr.); length, 29 c.m. (normal, 11.5 c.m.); breadth, 15 c.m. (normal, 5.5 c.m.); thickness, 11 c.m. (normal, 3.5 c.c.). I do not know of another kidney of this type which was as large. There are thousands of cysts, varying in size from that of a pea to a pigeon's egg. The contents of these cysts is mostly of a yellowish to dark brown colloid material very similar to that found in multilocular adenocystomata of the ovary.

The etiology of this condition is unknown. The disease runs in families at times and may also affect the liver and pancreas. The nature of the affection is that of atresia of the papillæ and three different etiologic factors are claimed according to the different authors who have studied this disease.

1. Inflammation theory. Nephritis papillaris, changes in arteriolæ rectæ or primary fibrous nephritis.

2. Malformation theory. Anomaly of development. Uriniferous tubules closed with formation of retention cysts.

3. Neoplasm theory. Cystic kidney to be considered as a multilocular adenocystoma. In this case the cysts are supposed to be caused by atypical proliferations of glands which develop in the originally normal or malformed kidney.

SYMPOSIUM ON ANESTHETICS.

THE USE OF CHLOROFORM.

Joseph A. Meek, M.D., Chicago.

However much the various anesthetics may be discussed there is every probability that extreme views as to their respective merits will continue to prevail. There are now and there will continue to be physicians and surgeons, who would exclude chloroform altogether from their own use, and would almost deny the right of others to employ it under any circumstances. I should like, therefore, to be considered not so much an advocate as an apologist for the use of chloroform by the private practitioner. Any reference to its use in hospital practice and all reference to hospital statistics I shall endeavor to avoid.

At the outset I think I may assume that there are three things about chloroform that are admitted by all objectors even the most strenuous. First, its extreme efficiency for the purposes of a general anesthetic. Second, its superior agreeableness to the patient. Third, its extreme convenience to the daily visiting doctor himself. These three important points are so far removed from controversy that they need no argument, illustration or discussion. They are especially appreciated by the average country physician.

What remains then is the real ground for all objections, the alleged risks assumed in its employment. Let us admit then that as regards safety, chloroform is not what we want. What we need is an anesthetic that could be used on any patient, of any age, in any condition, for any required length of time, by any physician or lay assistant, with or without experience, and without incurring any risk whatever. Such an ideal drug chloroform is not. Its most enthusiastic friends do not contend that it is universally and automatically safe. Nevertheless it approaches nearer that standard than could reasonably have been expected of an anesthetic so irresistibly efficient as it is. As proof of this assertion allow me to refer to the marvellous immunity of the chloroform fiends, I mean the victims of the chloroform habit, victims of the varying degrees of addiction who use it on themselves by daily or nightly or monthly inhalations or irregularly, whenever some paroxysm of asthma or hepatic or renal colic, neuralgia, or neurosis, seems to them to make it indispensable.

Do these people die of self-induced anesthesia? I never knew of a case and I never heard of any one that did. A reckless habit and in its higher degrees a pernicious habit well calculated to disintegrate both soul and body. But the drug didn't kill when the habit was forming and it doesn't kill after the habit is formed. How are we to account for this exemption from the sudden surprises of chloroform? The answer that they do not take enough is not adequate. They take enough to go to sleep. They take enough to go sound asleep—and it is during this process of going to sleep that nearly all of the fatal chloroform accidents have happened. They take enough to go to sleep but they do not usually take more than they want. There is somewhere an irritation that the chloroform relieves. The effect is agreeable. There is no fear in advance. There is only the desire for the effect of the toxicant and during the inhalation there is no feeling of alarm excited by taking it too rapidly. So long as there is any degree of self-control retained the administration is regulated by their sensations. After control is lost they are frequently exposed to the dangers of profound narcosis. Sooner or later they rally, and why? One reason perhaps is the comparative absence of shock. The reason there is no shock is the absence of violence in the method of administration.

There is no undue haste. The transition is gradual, so gradual that the vital mechanism has time to adjust itself automatically to the business of defense. The time consumed may be long or short but there is at least time enough for the adjustment to be made. A principle in this automatic self-adjustment may often be the persistence of the source of irritation that called for the chloroform in the first instance. This source of irritation may become dormant but not dead and tends persistently to revive. This principle explains the frequent tolerance of incredible quantities of this dangerous drug.

It is this principle that protects and has protected the patients in thousands of accidents, injuries, and emergencies, when doctors drunk and doctors sober have slung the poison right and left with easy indifference. To put this in another form, the conditions that tend to produce pain, persistent to a greater or less degree under the chloroform, stimulate the cardiac nerves and help to keep the patient alive in spite of the chloroform.

Without doubt suicide can be accomplished by chloroform inhalation if deliberately and intelligently planned. Very likely, too, unintentional suicide has at some time or other been the result of an attempt at self-induced anesthesia. I shouldn't want to try it myself but then I am afraid of chloroform, and besides I have no abnormal source of irritation anywhere in me to serve as a means of protection in trying the experiment. These addicts that I have cited have the advantage of me in both of these points, and their history shows that when graduated to the sensations of the subject chloroform may be taken with impunity as to immediately fatal results. But it is not convincing to the addicts themselves with relation to our professional use of it. They are all sure it is safe in their own hands but they are very suspicious of its safety in mine. If any degree of tolerance is ever acquired by the habitual use of the drug, they themselves do not seem to know it.

The morphin fiend is not afraid you will over-dose him. The chloroform fiend is not willing that you should dose him at all. I speak from experience. I have been turned down by them and turned down hard. In the case of a poor man who greatly needed an operation I offered to secure the service of a capable surgeon and give him the anesthetic myself all gratuitously but to no purpose. The offer was submitted to him from time to time during a period of fifteen years, but he never got up confidence enough in me to let me hold the bottle, and perhaps he was right; very likely I should have killed him. He is now dead, nor did he die of chloroform narcosis. If he had died in my hands during the anesthesia I think I should have said it was not the chloroform but mortal fear of me that produced or at least determined the fatal result.

I think that fear is fully as fatal as chloroform, and it is about the worst ingredient that you can mix with it. When the two are combined it is not quite fair to lay the blame wholly on one or the other until the case has been

investigated. Without investigating if you simply charge up the fatalities to the mixture you will probably be right. This is merely a guess on my part. I have never seen but one person die under chloroform and that was at the end of a long operation. She had entered the operating room with a presentment of death, having just bade her husband a touching last farewell.

The previous mental condition was perhaps only one of several factors in her case, but from the circumstances I was induced to believe it was not the least important one. The chloroform was a factor of course, but there was no sudden arrest either of the circulation or respiration, simply a death from exhaustion. Whatever may have been the cause of death in this case I still maintain that when fear is absent all other dangers are diminished.

For half a century all over this country, especially in the west and south, an impure chloroform has been administered by physicians and dentists; also by fake doctors and fake dentists and ignorant lay assistants, by people whose chief qualification was their confidence, to patients whose chief protection was their ignorance of fear in the thousands of instances, and with an infrequency of accidents that is simply incredible and almost unaccountable. Singular how fortune favors the fakes. It is not among them that fear becomes a force that kills. It is among the learned, the skilled and the trained, among men fitted and outfitted for every emergency. It was not in a remote corner or neck of the woods, but in a high grade modern hospital that the word, "good-bye," became the means of frightening a man to death.

The magnificent hospital equipment and elaborate preparations and precautions taken in advance of the operation which ought to have filled the patient with confidence, excited in his timorous spirit only forebodings of impending doom. After he had been satisfactorily narcotized and the operation was progressing happily, who could have anticipated that a casual word would have revived the destroying demon of fear?

It must have been in a paroxysm of partial consciousness that he caught the word and repeated it. He continued to repeat it with continually increasing excitement till his fearful dream was realized and his nightmare of terror had done its fatal work. We are not informed as to what efforts were made to dispel his delirium nor do we know that it could have been dispelled, but we almost know that such a tragedy could not have happened among a set of fakes. The never failing faith in fakes and faking would have been a guarantee against it. It is preposterous, of course, that patients will take alarm at the preparations employed to secure their safety, but it is not unnatural.

A highly educated and orthodox German physician at Cologne was too conscientious and cautious to use chloroform or any anesthetic to assist him in reducing a hernia, till he had made tedious but necessary preparations for a possible operation. Meanwhile the patient, alarmed by these serious precautionary measures sent for a half trained, disreputable Yankee doctor who relieved the situation in a few minutes by posture and primary chloroform anesthesia. You would think that the respectable German graduate would have taken a lesson from this, but he didn't. He was simply disgusted at being displaced and disgraced by a man who had been faking so long that he was exempt from the operation of the medical license law. He was hurt at being treated disrespectfully, but he was grieved that his friend, the patient, should rashly, recklessly and irreligiously have risked his life by taking a few whiffs of chloroform.

Now why should an intelligent regular relegate to his irregular rival an anesthetic agent so pre-eminently adapted to the requirements of the general practitioner? There is no reason whatever except his own timidity and the timidity he infuses into his patient. He turns over to his inferior an agent that has the widest range of adaptability, one that can be limited to the mildest degree of anesthesia or extended to the profoundest depth of surgical narcosis, an agent whose effects can be shaded to meet every age and condition and made almost as agreeable as it is efficient, an instrument of precision which does

precisely the work it is intended to do, and the reason he discards this instrument is that it has too keen an edge.

Every doctor has a right to exercise his preference as far as his own cases are concerned and if he chooses to relinquish his best resources to his inferiors that is his own affair. But when he proceeds further and denounces the right of others to use it, he ought to have some better argument to bring forward than a series of experiments on dogs. I think I have seen chloroform administered by more than a thousand persons who were neither doctors nor nurses, with a sympathy and tact that were instinctive rather than intelligent and without a single accident notwithstanding the fact that it is dangerous to dogs. Still if a doctor is afraid of it he shouldn't use it. His distrust will infect his patient. The same should be said of a doctor who knows in his soul that he is afraid of a knife.

We have other anesthetic agents, enough to go around and there are more to follow. No doubt the best is yet to come. But for a little while longer chloroform will have a place in private practice, not for the benefit of the strong and robust patient in the prime of life who can stand any anesthetic, but rather in the interest of the weak and frail, the young and tender, the old and feeble,—for the sake of these and also some others the family doctor will still need it in his business.

NITROUS OXID AND OXYGEN IN GENERAL SURGERY.

F. K. Ream, M.D., D.D.S., Chicago.

It shall be the purpose of this short paper to consider nitrous oxid and oxygen from the present clinical standpoint, omitting the physiologic and chemic action, as well as the blood changes, all of which are treated extensively in a recent article entitled "The Blood Changes Incident to Surgical Anesthesia, with Special Reference to Those Induced by Nitrous Oxid," from the Surgical Clinic of Dr. A. D. Bevan, Presbyterian Hospital, and the Laboratory of Experimental Therapeutics, S. A. Mathews, director, the University of Chicago, and extracts from an article with the above title by Drs. Walter W. Hamburger and Fred E. Ewing, Chicago, presented in the Section on Surgery and Anatomy of the American Medical Association at the Chicago session, in June, 1908. This paper was a part of the report of the Commission on Anesthesia of the American Medical Association. The article appears in full in the *Transactions of the Section*, Sept. 12, 1908, vol. 51.

In 1844 Dr. Horace Wells, of Hartford, Conn., set the world agog over his introduction of nitrous oxid as an anesthetic in general surgery. The following four years brought the anesthetic properties of ether and chloroform to the front; thus modern anesthesia was developed practically in the last half century. Sir Humphrey Davy advocated the use of nitrous oxid to relieve pain as early as 1800, but its anesthetic properties were not developed until nearly fifty years later.

Early efforts in public demonstrations proved futile until 1863, when Dr. J. Q. Colton reported 20,000 administrations without a fatality. Later on, J. B. Clover pointed out the advantages of combining air and presented improved methods of administering nitrous oxid gas. He also first suggested the use of gas as an induction to ether. Though these were epoch-making years in anesthesia, it took the Raphael touch of a Chicago physician, Dr. E. Andrews, in 1868, to add the agent pure oxygen, which has been instrumental in robbing anesthesia of its horrors and dangers, until to-day it is safe to assume that it is safer to take nitrous oxid and oxygen than to ride in an automobile or cross a thoroughfare in Chicago on a busy day.

It is estimated that in Greater New York nitrous oxid is administered 800 times daily, which totals 219,000 administrations annually; in ten years 2,190,000, and within these ten years, 1895 to 1905, two deaths have occurred from nitrous oxid. One physician in Philadelphia reports 287,000 administrations for tooth extractions in the past twenty-five years without a single fatality. A

photograph here exhibited of a roll containing over 600,000 names and addresses of patients operated on in the Colton Dental Association, Cooper Institute, New York, is of astonishing magnitude. These statistics of nitrous oxid, though large, to my mind, are not convincing proof of safety, as they record very short operations and without the addition of pure oxygen.

It is very evident that the danger of nitrous oxid increases in ratio to the time it is prolonged and diminishes with the admixture of pure oxygen. The mortality of nitrous oxid has been greatly increased in the past few years, owing to the effort on the part of anesthetists to substitute common air for pure oxygen. Vitiated air in the crowded surgical room is not an oxygenating agent, and should never be used if pure oxygen can be obtained. The true anesthetic properties of nitrous oxid cannot be evenly maintained without pure oxygen, and why physicians will continue to subject patients to the dangers of gas anesthesia without pure oxygen I cannot conceive. Cyanosis may be overcome eight times quicker with pure oxygen than common air, which contains a large amount of nitrogen. Numerous experiments conclusively prove the value of pure oxygen. Mr. Martin confined a dog in a reservoir for three days, breathing 85 per cent. nitrous oxid and 15 per cent. oxygen, showing that the gases were respirable for an indefinite period without injury to respiration or circulation. Sprouting seeds fail to grow when confined in the gas alone, but will germinate when pure oxygen is added.

The range of usefulness of nitrous oxid and oxygen seems to be unlimited, and the fact that hospitals and surgeons are using this anesthetic in a greatly increased number of cases, points to its almost universal adoption. Indeed, it is high time, as the primary and secondary effects of chloroform and ether are appalling and seldom reported. A lamentable fact is that many operations are pronounced successful, though the patient may die from a post-operative pneumonia or renal complications in a few days. The great majority of deaths in prostatectomies occur the first forty-eight hours following operations. Nothing is more feared by the laparotomist than complete paralysis of the bowels, due to general anesthesia and the subsequent inactivity of the kidneys.

In obstetric practice this anesthetic is excellent, because we may obtain analgesia and even anesthesia without muscular relaxations or disturbance of the normal course of labor. Uterine contraction is not in the least interrupted by the use of this anesthetic according to the following methods: On the approach of labor pains the patient is permitted to inhale three or four breaths, placing her in a state of analgesia; the inhaler is then removed, and the process is repeated as often as necessary. Should it be desired to retard labor a small percentage of chloroform may be added. Owing to the rapidity of the action of the gas and its rapid elimination it stands foremost as an obstetric adjuvant.

Statistics of my own cases include several thousand administrations during eighteen years' practice; 150 anesthesias for Chicago surgeons the past two years. Chloroform and ether anesthesia in the majority of these cases were markedly contraindicated and included vaginal and abdominal hysterectomies, laparotomies, appendectomies, perineorrhaphies, cystotomies, nephrolithotomies, nephrectomies, thyroidectomies, tonsillectomies, numerous rectal operations, labor cases and most every operation known to surgery, arterio-sclerotic and atheromatous patients, patients with cerebral heart and respiratory lesions, patients from three to ninety-two years of age; anesthesia from fifteen minutes to two and a half hours. There was not a death or collapse in a single case, and I ask what greater plaudits for nitrous oxid and oxygen anesthesia could be enumerated.

This anesthetic may be administered entirely by the nose in tonsillectomy and surgery about the mouth. Exhaling valves may be closed and the gas forced to the patient without regard to inhalation and respiration.

The great barrier as claimed by the surgeon to the universal adoption of this, the foremost anesthetic, is the expense. In rebuttal to this claim there never has been a time when the surgeon was as well paid for his services as at the present time, and for him to accept a large fee and to give his patient an inferior anesthetic and submit him to the nausea, danger and great suffering is a gross injustice.

In many hospitals surgeons are employing old methods of anesthesia because their anesthetics are administered by a sister or interne without expense, save the small fee for the operating room. Hundreds of patients would be very willing to pay the increased expense if the surgeon would inform them they could escape the primary and secondary effects of anesthesia and attendant nausea, by taking the superior anesthetic.

Again, the action of nitrous oxid is confounded with the cyanosis of chloroform and ether, which is produced from an entirely different cause and is not present when pure oxygen is used. Many surgeons have failed and discarded this anesthetic, because they have employed the inexperienced interne or nurse, who pays more attention to the operation than the anesthetic with which they have been entrusted. Expert attention and the proper apparatus is first required, and then the closest attention, much greater than with any other anesthetic. Every respiration must be accounted for and all other symptoms of the patient's condition besides. No anesthetist can divide his attention and give a safe nitrous oxid and oxygen anesthetic. Much closer attention is required than with any other method. Surgeons have complained of the lack of relaxation when nitrous oxid was administered, and here is where the skill of the anesthetist with the right kind of apparatus and pure oxygen is severely tested.

Nitrous oxid and oxygen may be substituted for chloroform and ether if the anesthetic is first preceded by a hypodermic of morphin and atropin. This seems to supply the missing link and makes it possible to obtain quick and tranquil anesthesia. The scopolamin-morphin sequence is not undesirable, but observation leads to the selection of the former, which is not followed by the long sleep and stupor. The action of morphin on the brain producing anemia undoubtedly counteracts the cerebral congestion incident to nitrous oxid, and at the same time lessens activity of the cerebral cells and their demand for blood.

In short operations, if the morphin-atropin sequence is not desired, a small per cent. of chloroform or ether vapor may be added to the gas, through the same inhaler. Thus quick control of the patient is obtained. The apparatus which I use in anesthesias was invented by Dr. Chas. K. Teter, of Cleveland, and, though expensive it be, it is superior to all others now on the market. With this apparatus (now exhibited) it is possible to administer nitrous oxid, ether and chloroform from the same transparent mask. The anesthetic is passed through a hot water coil, and reaches the patient at body temperature, which results in the saving of at least 25 per cent. of the gases and undoubtedly lessens the possibility of pneumonia. The anesthetic is much more respirable, free from irritating properties and the patients experience apparently a natural and normal sleep.

I herewith briefly present a few average abstracted cases and reports of surgeons for whom I have administered this anesthetic:

Patient, boy, aged 3½ years, with nervous chills and sinking spells. Attacks would often recur and last from four to five hours, with sudden rise of temperature, 105 to 107; cyanotic, very weak; pulse 160 to 170 per minute; respiration labored, 40 or more per minute; after a gradual decrease from 8 to 10 per minute, "Cheyne Stokes respiration;" extremities cold. Dr. J. C. Beck, the attending surgeon, sends the following report: Diagnosis, scarlet fever, running usual course, with complication of acute otitis media, bilateral swelling on right side of neck made up of 3 or 4 separate movable glands; ulcerative rhinitis; bloody discharges, and a double otitis media purulenta. Discharge from right ear greater than left; no odor; perforation of both tympani, good size, centrally located. Microscopic examination showed few micro-organisms, mostly staphylococci. Dr. Adolph Gehrmann made blood examination, which did not show as high degree of leucocytosis as expected. Urinary paralysis negative. Discharge and swelling in neck increasing on right side, and being suspicious of an associated thrombophlebitis of the right internal jugular vein, operation was decided on at 8:30 p. m. Under gas-oxygen anesthetic administered by Dr. Ream the usual exploration of the mastoid antrum was done. Whitting incision to follow fistula which was surrounded by perisinusoidal abscess infection and a distinct thrombus of sinus. Incision carried from tip of mastoid to within one inch of sterno-clavicular articu-

lation, finding partially collapsed internal jugular vein, this was doubly ligated and cut between ligatures. Portion of cephalic end of vein was dissected upward and contributary branches tied off, but remains of jugular could not be dissected owing to enlargement and infiltration of glands. Going back to original field of thrombotic sinus, I incised it for about an inch and removed clot both ways far as possible towards torcular Herophili until blood came from that region and cleaned out clot toward bulb. Drain inserted towards jugular bulb and mastoid antrum. Patient put to bed in very poor condition so far as pulse and respiration was concerned. Dr. Ream remained the entire night, administered pure oxygen, patient responded beautifully without any deleterious results from anesthetic. Anesthesia under gas and oxygen was satisfactory, causing no delay to operation, patient was apparently in no danger at any time from anesthetic.

During convalescence nine injections of antistreptococcic serum, at intervals of twelve hours, were given with decided beneficial effects. Septic attacks disappeared in two weeks, evening temperature running 100 or 101, fifth week patient recovering, though much swelling in right leg and fluctuation at one point, which is disappearing.

Dr. L. W. Bremmerman, Oak Park Hospital, operated in the following cases during January, 1909: M. O., aged 74; suprapubic prostatectomy; patient weak; suppression of urine; kidneys infected; bladder full of pus; arteries sclerotic; heart overacting with aortic murmur; ether and chloroform both contraindicated. Warm gas and oxygen was administered; pulse beginning of anesthetic 88, at close 110 and of excellent quality. Patient entirely recovered from anesthesia before leaving operating room; no post-anesthetic nausea or vomiting. Recovery uninterrupted and patient going to office daily.

Mr. M., aged 76; arteries sclerosed; suprapubic prostatectomy; warm gas and oxygen anesthetic; pulse preceding operation 80, following anesthetic 100; recovery complete before leaving operating room; no nausea or vomiting. Recovery uninterrupted. When bladder was cut into patient showed signs of collapse, which was overcome instantly by increasing percentage of oxygen.

Mrs. M., aged 48; diagnosis, multiple papilloma of bladder; suprapubic operation; warm gas and oxygen anesthesia, 1 hour and 15 min. Pulse at beginning 90, at close 110, general condition following operation excellent, with exception of slight nausea, which could be accounted for as the patient claimed calomel produced same effect, which was administered night before operation, and nausea was present before anesthetic was administered.

Mr. P., aged 76; Drs. Loewy, Schmidt and Willard, operating at Oak Park Hospital, in February, 1909; prostatectomy, 1 hour and 10 minutes; morphin and atropin preceding anesthetic. Condition of patient excellent during anesthetic.

Mrs. A., aged 56; Drs. Rogers and Reynolds, operating at Willard Hospital; ventral hernia, 1 hour and 10 minutes. Patient weighed nearly three hundred pounds, greatly increasing difficulties of operation. Complications made this a most tedious operation. Had a fatty heart. Morphin 1/4 and atropin 1/100 gr. was given hypodermically one-half hour before operation. Superheated nitrous oxid and oxygen was administered throughout the operation. Relaxation perfect, no nausea or vomiting or shock during or after anesthetic. Patient awakened in five minutes and conversed rationally. Surgeons agreed chloroform and ether greatly contraindicated in this case.

Case 160; patient prominent physician; operated on by Dr. Truman W. Brophy, in November, 1909, Michael Reese Hospital, for removal of badly impacted lower third molar; time, 1 hour and 10 minutes; gas and oxygen was forced through nose throughout operation, in recumbent position. Some difficulty was encountered in the beginning in getting control of patient, but after being well anesthetized, the operation was completed. This was a severe test of the anesthetic owing to excessive hemorrhage in the mouth and extensive dissection necessary for removal of tooth. Patient was awake in one minute after operation.

Patient, Dr. John Wesener, Chicago, surgeons Drs. Carl Beck and J. B. Murphy. Operation for severe case of gangrenous appendix. To quote from Dr.

Wesener's letter, "The anesthetic, warm nitrous oxid and oxygen, was administered for thirty-five minutes, and during all that time I was under complete anesthesia. On awakening, which took place on the operating table, I noticed no bad effects, suffered no nausea nor any bad symptoms which are so common to other anesthetics."

Patient, female, 92 years. In 1907, Dr. Carl Doege, Marshfield, Wis., and Dr. C. B. Powell, Chicago, operated for malignant cervical glands for one hour and fifteen minutes. Owing to extreme age of patient and impaired respiration due to pressure from growth, the operation was deferred for years in fear of anesthetic. The patient took the anesthetic in an ideal manner, making a splendid recovery and walked to her room twenty minutes after operation, showing no ill effects.

Dr. W. F. Scott, Maywood, Ill., reports two anesthesias recently given at the Oak Park Hospital as follows: "In so far as it is possible for me to determine, it is pretty nearly ideal. In Dr. Mathews' case (excision of both lobes of thyroid) for removal of large cystic goitre, a two-hours operation, the tachycardia was very marked and conditions generally contraindicated general anesthesia. The breast amputation case was one who had had two other anesthesias previously followed each time by two days of ether nausea. Neither of these cases had any post-anesthetic nausea and were practically free of the discomfort which usually follows the ordinary anesthetic.

"As to the comparative dangers of the method used by you and that generally used, of course two cases would not permit me to express an opinion. I will say, however, that the anesthetic was sufficiently complete at all times and that they were always in safe condition. One other point that attracted me was the complete absence of mucous respiration."

LOCAL ANESTHESIA.

EDSON B. FOWLER, M.D., CHICAGO.

The subject may be divided into anesthesia produced by direct applications to the skin, mucous or serous membranes, and anesthesia produced by injection. A part only of the latter division will be considered under the headings of anesthesia with little or no infiltration, e. g., spinal anesthesia, anesthesia with infiltration. Infiltration is divided into local or field work and nerve blocking.

As far as I know, Corning, an American, in 1855, published the first article on "Spinal Anesthesia and Local Medication of the Cord." Quinkle, in Berlin, in 1891 had used spinal puncture to relieve pain, and from this Bier conceived the idea of spinal anesthesia. He used cocain on himself and an assistant. Disagreeable effects coincident with the anesthesia eventually led to the discovery of a local anesthetic less toxic. Numerous products in the main less toxic than cocain have been introduced, nevertheless spinal anesthesia has not been regarded with so great favor in this country as it has been abroad. Hüster, of Marburg, is of the opinion that Americans have been slow to take it up because of the early unfortunate results, such as failure to obtain anesthesia, paralysis, serious headaches, deaths, etc. But he believes that most of the old objections, because they are controllable, are not now valid. Among those who have used spinal anesthesia somewhat extensively are Tuffier, of Paris, who reported 530 cases with no deaths; Kümmel, of Hamburg, who reported 186 cases in patients from five to eighty years of age with no deaths; Kronig, who reported 1,000 cases and no deaths that could be "fairly attributed to the anesthetic;" Döderlein, who reported 44; Von Rothorn, of Heidelburg, who reported 107 cases with no unfortunate results, and Gaston, who has collected 5,350 cases from the literature with five deaths. This does not seem to be a bad showing compared with that of chloroform and ether when we remember that spinal anesthesia is used in some cases where there is fear of employing ether or chloroform.

In considering infiltration anesthesia, whether for local work or blocking nerves, it is well to remember how much of the solution in hand may safely be injected without producing serious effects, local or general. The various 'caines in solution are increasingly toxic in proportion to their concentration, i. e., the

actual amount of novocain suggested as a maximum dose in a 1 per cent. solution is 3 grains. The amount of the same drug in a 1/4 per cent. solution is 6 grains. On the other hand, adrenalin or suprarenin lessens the general toxic effect of the 'caines by localizing the drug and allowing it to enter the general circulation gradually. Braun has shown that on animals a lethal injection for the animal will be harmless if a small amount of adrenalin chlorid is added to the solution. Barker has used 200 c.c. of B-eucain, 2 to 1,000, with no toxic results. He asserts adrenalin chlorid delays the anesthesia 15 to 60 minutes after the infiltration. I have not been able to confirm this in my work, but on the contrary anesthesia seemed to be produced at once in the area infiltrated but not so far as the tissues are blanched, which blanching soon extends one-fourth inch to one-half inch beyond the zone of actual infiltration.

It is well to use freshly prepared solutions, although Struthers, of Leith, uses a stock solution of novocaine which he resterilizes as needed. He asserts the solution keeps well for months. Adrenalin chlorid will not stand boiling, sunlight, or retain its properties if kept in solution with the various 'caines. It becomes inert probably within an hour. The synthetic product suprarenin is not decomposed so readily, at least it bears boiling fairly well and is fully as powerful in its action as adrenalin chlorid.

The solutions used for infiltration are numerous, but the limits of this paper will permit us to consider only a few of those which have been in our experience satisfactory. A solution devised by R. M. Parker after some experimental work (ILL. STATE MED. JOUR.) has given good results. Its formula is:

B-eucain	0.2	
Adrenalin chlorid	0.8	to be added at time of use.
Sodium chlorid	0.6	
Aqua	100.0	

B-eucain is irritating to the tissues, more so perhaps than most of the 'caines. I have used recently novocain in place of B-eucain, tropacocain, stovain, alypin, etc., because it is perhaps least toxic and yet gives a satisfactory anesthesia. Experiments were performed to test a few solutions. The same quantity was used in each case. The skin of the arm was in each instance infiltrated to the size of a dime.

Experiment 1.—Novocain	0.2
Normal salt solution	100.0

No pain was produced by the infiltrating aside from the first needle prick. The infiltrated area showed a blanched weal. Anesthesia was complete to the edge of weal. Most of the anesthesia and blanched condition disappeared in ten minutes.

Experiment 2.—Normal salt solution. The injection produced moderate pain. Anesthesia lasted about 5 minutes.

Experiment 3.—Solution—Novocain	0.2	
Suprarenin	..	three drops 1 to 1,000 to the ounce added at the time of injection.
Sodium chlorid.	0.6	
Aqua	100.0	

Infiltration gave a blanched weal and in a few minutes a blanched area one-fourth to one-half inch beyond the zone of infiltration. Complete anesthesia occurred at once in the infiltrated area. One-half hour after the infiltration the area of anesthesia had extended peripherally from the edge of the weal about one-eighth inch and extended no farther. Total anesthesia varies with individuals; in this case it lasted one and a half hours or longer than in some cases.

Experiment 4.—Consisted in using:

B-eucain	0.2	
Adrenalin chlorid	0.8	added ten days before.
Sodium chlorid	0.6	
Aqua	100.0	

Result, total anesthesia with at first a burning itching sensation. Redness and moderate swelling in addition to the infiltration appeared in five to ten minutes. There was no blanched zone except in the area of infiltration and due to the pressure of the infiltrating fluid as it corresponded in duration and appearance to the weal and blanching produced by the normal salt solution in Experiment 2. There was no blanching beyond the edge of the infiltrated weal as is the case with active suprarenin or adrenalin. The duration of the anesthesia was about ten minutes, which corresponds to the duration of novocain or B-eucain when used alone. Adrenalin chlorid was inert.

Experiment 5.—Solution used was:

B-eucain	0.2	
Adrenalin chlorid	0.8	added at the time.
Sodium chlorid	0.6	
Aqua	100.0	

The results of this test differed but little from Experiment 3, where

Novocain	0.2	
Suprarenin	3.0	drops to ounce
Sodium chlorid	0.6	
Aqua	100.0	was used,

except the injection showed pink for about twenty minutes with a blanched zone beyond the infiltrated area. The pink became blanched after twenty minutes. Anesthesia lasted about one and a half hours.

Experiment 6 consisted in using a solution of

B-eucain	0.2	
Suprarenin	3.0	drops to ounce added ten hours before test.
Sodium chlorid	0.6	
Aqua	100.0	

Suprarenin was inert. Anesthesia lasted about ten to fifteen minutes.

Experiment 7.—Novocain	0.2
Sodium chlorid	0.6
Aqua to	30.0

Boiled three minutes in test tube, when three drops suprarenin was added and boiled one minute. Injection weal only was blanched which gave way to a pink color in five minutes. Anesthesia about five minutes, showing the suprarenin was rendered inert when boiled with the novocain at the time of the operation.

Experiment 8.—Normal salt solution plus three drops of suprarenin to the ounce was boiled in a test tube two minutes. Weal and area beyond one-half inch was blanched about forty-five minutes. A shorter time than when suprarenin is not boiled. See Experiment 11.

Experiment 9.—Boiled novocain solution	0.2
Sodium chlorid	0.6
Aqua	100.0

Anesthesia about eight minutes' duration.

Experiment 10.—Novocain salt solution same as Experiment 9. Not boiled. Anesthesia about eight minutes.

Experiment 11.—Suprarenin solution	0.2
Sodium chlorid	0.6
Aqua	100.0

Not boiled. Blanching lasted one and a half hours, well marked.

The results of the experiments would tend to show that novocain is less irritating than B-eucain and that boiling does not seem to decompose it; that adrenalin chlorid and suprarenin are rendered inert soon after they are added to B-eucain or novocain solutions; that boiling suprarenin in an ordinary glass test tube with normal salt solution two minutes appeared to limit its physiological action one-half. The solution used in Experiment 3 seems most satisfactory, since it is non-toxic, and 200 c.c. can be used without fear of local or general ill results. The novocain can be boiled and the suprarenin, if boiled alone and added at the moment of using will retain half and perhaps more of its characteristic properties.

CRAWFORD COUNTY.

The Crawford County Medical Society met for its regular bi-monthly meeting in the Carnegie Library September 9. The following members were present: Drs. H. N. Rafferty, Midgett, Price, Newlin, T. N. Rafferty, Kasdorf, Lowe, Voorheis, Lindsay and Firebaugh. Dr. Kasdorf read an excellent paper on "Malaria." Dr. L. R. Illyes was to have presented a paper on "Bronchitis and Bronchopneumonia," but was not present and did not send the paper to the secretary. After the business meeting the society adjourned.

A. LYMAN LOWE, Secretary.

JACKSON COUNTY.

The Jackson County Medical Society met in the parlors of St. Andrews Hospital, at Murphysboro, Ill., Sept. 16, 1909. Those present were Drs. Sabine, Molz, Roth, Grizzell and Essick, of Murphysboro; Dr. Horstman, of Vergennes; Drs. Etherton and Mitchell, of Carbondale. Dr. L. R. Wayman, of Murphysboro, was a visitor. The committee on public health and legislation reported that one J. A. Davis, whose name had been given at the previous meeting as being guilty of illegally vending medicines, had been prosecuted and fined $100 and costs. The name of A. J. Phemister, of Carbondale, was given as one vending medicines and the secretary was instructed by the president to request Dr. Egan to institute proceedings against this party.

The applications of Dr. Earnest Neber, of Carbondale, and Dr. L. R. Wayman, of Murphysboro, for membership in the society were presented and referred to the board of censors for consideration, they to report on same at the next meeting.

Dr. C. O. Molz presented a very interesting case. A lad, while playing with a railroad torpedo accidentally discharged it, when a large piece entered the skull a short distance above the left eye, tearing its way into the brain. The case was operated on fifteen hours after the accident by Dr. Molz and the foreign body removed. At no time has the patient lost consciousness and everything points to an early recovery. At present the boy has quite a hernia of the brain just over the eye. The case was highly interesting and drew out a lot of discussion as to the best method of caring for the hernia. Dr. C. G. Grizzell read a very interesting paper on "Typhomalaria." This paper is to be read before the Southern Illinois Medical Society at East St. Louis in November with additional remarks. The discussion was opened by Dr. Roth and participated in by all present. Dr. H. H. Roth presented two very interesting microscopic specimens, viz., bacillus typhosus and plasmodium malariæ.

Adjourned.

RAY B. ESSICK, Secretary.

KNOX COUNTY.

The Knox County Medical Society met at Galesburg for the sixteenth semi-annual session on September 16, with the vice-president, Dr. E. E. Davis, in the chair. There were about fifty physicians present for the morning and afternoon sessions. Drs. Fred Ewing and Clyde A. Finley were elected to membership. On the motion made by Dr. B. D. Baird the chair appointed a committee of three to be known as the public policy committee; this committee to keep in touch with our representatives in the state legislature and to work with the legislative committee of the Illinois State Medical Society. The chair appointed on this committee Drs. Baird, Hall and Maley. On the motion of Dr. C. B. Ripley the chair appointed a committee of three to meet the finance and almshouse committee of the Knox County Board of Supervisors, now in session, with a view of establishing a tent colony in the county for the treatment of tuberculosis. The chair appointed Drs. Ripley, Bradley and Cromwell. Papers were read by Judge R. C. Rice, of the Knox County Court; Dr. C. E. Beecher, of Gilson; Dr. C. A. Finley, of Galesburg; Dr. G. A. Longbrake, of Galesburg, and Mr. Thomas H. Potts, sec-

retary of the N. A. R. D., Chicago. These papers were well received and each was followed by quite a discussion. The meeting closed with a banquet given in the Galesburg business men's clubrooms.

D. J. EVANS, Secretary.

M'LEAN COUNTY.

The following items are culled from the September *Bulletin of the McLean County Medical Society* and from the annual program of the fifty-sixth year of the society, 1909-1910. The first meeting after the summer vacation was held at the Illinois Hotel, September 2. Thirty-five sat down to dinner and there was a total attendance of forty-three, an auspicious beginning for this year's work. Dr. J. L. Wiggins, president of the state society, was to deliver an address on "Medical Organization of the Past and Present," but unfortunately was unable to be present. After routine business, including voting on proposed amendments to the constitution and by-laws, Dr. F. H. Godfrey presented the following resolutions:

WHEREAS, Certain old line life insurance companies have underestimated the importance and value of the work done by their local examiners, and have reduced the fee for such work.

Resolved, That the members of the McLean County Medical Society, recognizing that the examination of every applicant for life insurance should be made with the same care and thoroughness, decline to make an examination for any old line life insurance company for less than five dollars.

Resolved, That this resolution shall take effect and be binding on the members of this society on and after October 1, 1909.

Resolved, That the secretary is to furnish each member with ten printed copies of this resolution, and that each member must notify the companies for which he is local examiner.

Dr. J. B. Taylor filled in the time allotted to the absent speaker, and ably entertained those present by an account of things material and medical on the northwest Pacific coast—a region he recently visited.

The society was organized March 20, 1854. It has furnished four presidents for the state society: Dr. Harrison Noble; Dr. A. H. Luce, 1864; Dr. Thos. F. Worrell, 1874, and Dr. John L. White.

The annual program from October, 1909, to June, 1910, follows: "The Demeanor of the Obstetrician in the Presence of the Patient," Dr. W. A. Balcke; "Our Present Knowledge of the Efficacy of Drugs," Dr. Elmer Horine; "Symposium on the Eye and Ear: The More Prevalent Eye and Ear Diseases;" Dr. Watson W. Gailey; "External Operations Connected with the Eye," Dr. J. B. Taylor; "The Treatment of Compound Fractures," Dr. J. K. P. Hawks; "The Value of the Laboratory to the Physician for Diagnostic Purposes," Prof. S. G. Winter, Illinois Wesleyan University; "The Relation of the Medical Profession to the Non-medical 'Practitioner,'" Dr. A. L. Fox; "Surgery of the Hand," Dr. W. H. Gardner; "Alcoholophilia," Dr. Fred Parkhurst; "Review of Medical and Surgical Progress for the Year," Drs. J. H. Fenelon and R. A. Noble.

MADISON COUNTY.

The regular session of this society was held at the Y. M. C. A. rooms, at Edwardsville on Sept. 3, 1909, with Dr. S. T. Robinson in the chair. This meeting was devoted entirely to the business interests of the members, Dr. R. S. Barnsback, of Edwardsville, introducing the subject by a well prepared article, "Is the Average Doctor a Good Business Man?" The paper produced a unanimous discussion, ably led by Dr. G. Taphorn, Alton; Dr. Leonard Schreifels, of Granite City, and Dr. J. M. Threadgill, of New Douglas. A committee to revise the fee bill was appointed by the chair, consisting of the following members: Drs. Schreifels, Threadgill, Everett, Ferguson, and Burroughs, with Dr. J. M. Pfeiffenberger, chairman. The following members were present: Drs. Ihne,

Foulds, T. P. Yerkes, Cook, Taphorn, Pfeiffenberger, Ferguson, Barnsback, Schreifels, Threadgill, Hirsch, Hastings, Sutter, Robinson, Burroughs, Pogue and E. W. Fiegenbaum. Our meetings are growing in interest and we expect a large and enthusiastic attendance at our annual meeting in Alton on the first Friday in December.

E. W. FIEGENBAUM, Secretary.

MORGAN COUNTY.

The Morgan County Medical Society met at the Public Library, Jacksonville, Sept. 9, 1909, with the president, Dr. Charles E. Cole, in the chair. The meeting was open to the general public and to the dairymen in particular, to hear an address by Mr. R. R. Brand, of the University of Illinois, on "The Dairyman's Cares and Profits in Clean Milk Production." The speaker reviewed the various precautions necessary before delivery of bacterially clean milk to the consumer can be made. He also laid especial emphasis on the educational campaign that must precede enactment of legislation compelling cleaner milk production. A number of the dairymen and physicians present took part in the spirited discussion of Mr. Brand's paper. The public was well represented and ground was gained toward a better milk supply for Jacksonville. Dr. Walter L. Treadway, of Concord, was proposed for membership in the society.

GEORGE STACY, M.D., Secretary.

NORTH CENTRAL ILLINOIS MEDICAL ASSOCIATION.

The thirty-fifth annual meeting of the North Central Illinois Medical Association was called to order at 11:30 a. m. at Princeton, Ill., by the president, Dr. E. S. Murphy, of Dixon. Members present: Drs. E. S. Murphy, Wm. O. Ensign, Burke, G. A. Dicus, O. T. Flint, Kaul, Griswold, White, Scott, A. E. Owens, Cromwell, Coveney, Robinson, Leage, Priestman, Kemp, Guthrie, Peterson, Keefer and Harms. The applications of Drs. Edward Gorton Cromwell, of Henry; William Carter Griswold, of Princeton, and John L. Priestman, of Neponset, were read and referred to the Board of Censors. There being no member of the board present, the president named Drs. Robinson, Ensign and Kemp to act. The treasurer's report was then read and referred to the Board of Censors for auditing. The Board of Censors reported favorably upon the applications of Drs. E. C. Cromwell, W. C. Griswold and J. L. Priestman for membership. It was moved and carried that the report be accepted and the secretary be instructed to cast the ballot of the association for the three applicants. The necrological reports were the next thing in order, there being four for the year. Dr. C. D. Chalfant, of Streator, had prepared the following report with resolutions upon the death of Dr. Joseph Dicus, which was read by Dr. Wm. O. Ensign and adopted as read:

LIFE OF DR. J. F. DICUS.

After an illness of one week following an operation for appendicitis, Dr. Joseph F. Dicus was called from the activities of life on November 1, 1908. He was laid to rest in Long Point cemetery, followed by a large funeral cortege by special train from Streator. The funeral service was in charge of the Masonic fraternity. The physicians of Streator and adjacent towns attended the funeral in a body.

Dr. Dicus was born in Moscow, Coshocton county, Ohio, Sept. 10, 1852, and had therefore just passed his fifty-sixth birthday. When 12 years old he emigrated with the other members of his family, in a covered wagon, to a farm near Ancona, Livingston county, Ill., where he grew to manhood under the most rigid environment which comes to the pioneer boy who seeks a higher education. As a young man he taught school, and in this way secured the money to attend college. He studied medicine in the office of Dr. Wood, of Streator, and attended Rush Medical College. By economy and his own efforts he worked his way through the medical college and graduated in the class of 1880.

Dr. Dicus was married in 1882 to Miss Maggie Grimes, and to this union have been born one daughter and three sons. For ten years Mrs. Dicus has been a confirmed invalid, and for the past five years, being a victim of rheumatoid arthritis, has required the care of a day and night nurse. Through all these years the faithful husband was ever at her beside, and no word of complaint ever fell from his lips, his smile never failing to hide the sorrow and trouble which were his. I think it can be truthfully said that no member of the medical profession in Streator was more interested in society work and gave more of his time or attended medical society meetings as frequently as Dr. J. F. Dicus.

He was a member of the Streator Medical Club, La Salle County, North Central Illinois and American Medical Associations, and attended their meetings most regularly. He was a member of the Good Will Church, Modern Woodmen and Masonic fraternity. Dr. Dicus' high ideals of medical ethics, which he followed in his social relations with other physicians, made him many loyal friends. His large hearted charity in the service of the poor was very great and his strenuous life of tireless work probably weakened his otherwise strong constitution and cut short his earthly career. By a peculiar fatality, four members of the medical profession of Streator, three of whom were in the prime of usefulness and the strength of a large experience, have been called in the past two years. Dr. Dicus himself made the necrological report on the death of Dr. B. L. Bonar at the last meeting of this society one year ago. The mortality list above referred to includes the names of Dr. B. L. Bonar, Dr. W. L. Smith, Dr. Thomas Croswell and Dr. J. F. Dicus.

The writer could not close this report without speaking of the many acts of kindness extended him by Dr. Dicus during the past two years of continued illness, by the many wayside calls when busy with other duties. It has been his pleasure to know but few men in the ranks of the medical profession more ready to give assistance when sickness came to a brother physician or his family. Dr. Dicus was strong in the elements of self-reliance, industry, sympathy and charity, and his passing will be regretted most by those who knew him best.

RESOLUTIONS ON THE DEATH OF DR. JOSEPH F. DICUS.

WHEREAS, The North Central Illinois Medical Society would record its appreciation of the life and labors of Dr. Joseph F. Dicus, one of its oldest members and ex-president of the society, who was so suddenly summoned to his reward on November 1 of this year; therefore be it

Resolved, That in paying this tribute of respect to his memory we wish to give expression to the loss sustained by this society and the high esteem of his brother physicians; therefore, be it

Rseolved, That in the passing of Dr. Joseph F. Dicus, an honored member of this association has been taken and the medical profession has lost an earnest and conscientious physician; therefore, be it

Resolved, That we extend our sympathy to the members of his family, and a copy of these resolutions be placed on the minutes of this society and published in the ILLINOIS MEDICAL JOURNAL and Streator papers and a copy sent to the family of the deceased.

Moved we adjourned to meet at 1:30 p. m.

Afternoon session, Dec. 1, 1908, called to order, with twenty-two members present. Dr. Kaiser then read the following necrological report upon the death of Dr. E. L. Watts, of Triumph, together with resolutions, which were adopted as read:

DR. E. L. WATTS.

Dr. Edward Lilly Watts was born May 9, 1866, near Washingtonville, Montour county, Pennsylvania. He graduated from Valparaiso University in 1889 and entered the Kentucky School of Medicine, where he graduated with high honors, June 15, 1891, and on June 24 was married to Miss Mabelle Jacoby, of Paw Paw, Ill. In October following he came with his bride to Triumph, Ill., and entered in the practice of his profession. He was a young physician with all the handicaps of youth in that calling, but soon won confidence and built up a large practice, larger in recent years than his strength was equal to. In this

practice he has endeared himself to hundreds as only a successful and kind hearted physician can. His daily care has been to meet the call of human need, no matter from whom it came and regardless of the question of remuneration. He was a member of the Waltham Presbyterian Church and for a number of years was an elder of the same. He was also a member of Waltham Masonic Lodge and took such interest in its teaching that at the time of his death he was a 32nd degree Mason. He was also a member of the leading medical societies of this state. He was buried from his late home at Triumph, Ill., Sunday, November 11, 1908. Honorary pallbearers were Dr. Edwards, of Mendota; Dr. Stette, of Paw Paw; Dr. Goble and Dr. Wiley, of Earlville; Dr. Burk, of La Salle, and Dr. Pettit, of Ottawa.

RESOLUTIONS ON THE DEATH OF DR. E. L. WATTS, OF TRIUMPH.

WHEREAS, It has pleased the Great Ruler of the Universe to remove by death our beloved brother, Edward L. Watts, and knowing that one who has been so useful to his fellow man, both in his private and medical life, and who was cut down so suddenly by Him who death all things well; therefore, be it

Resolved, That through the death of brother Edward L. Watts, the medical profession has sustained a loss of one who was ever ready to extend a helping hand to the sick and to the profession, and his family has lost a devoted husband and a kind and loving father.

Resolved, That we extend to his family our sincerest sympathy in this their hour of bereavement, and

Resolved, That a record of his death be spread upon the minutes of this meeting and that a copy of these resolutions be sent to his family.

J. M. KAISER, M.D.,
F. C. ROBINSON, M.D.

Dr. Wm. O. Ensign read the following neecrological report which he prepared upon the life of Dr. Thomas Crosswell, of Streator, together with the resolutions which were adopted as read:

DR. THOMAS CROSWELL, OF STREATOR.

To have been first informed at so late a date as Thursday evening last that the writer's name was on the program of this meeting for an obituary report of the late Dr. Croswell, of Streator, could but have given to that individual an unwelcome surprise, if not a distinct shock, since he had long before assured the secretary that he had but little knowledge of the Doctor's personal history, and had had naught but a few recent and brief, though very pleasant, years of acquaintance with him. Neither had he ever resided in the same community nor possessed any extended information or means of securing such concerning the first four score and ten years of the deceased member's active and useful life. To base even a brief yet appropriate biographical sketch of one, who had completed a period of vital existence and activity nearly equaling three generations of human life, upon so limited an amount of individual knowledge as was in hand, seemed to be but presumptuousness, and were it not for the strong probability that other and more appropriate notice of so worthy a character as Dr. Croswell would otherwise fail of being placed on record, the writer would not now undertake to present the subject of his own assignment on this occasion.

To neglect to promptly recognize the loss by death of so worthy a man, venerable a member of our profession and association would constitute a regrettable omission of respect and duty; likewise a breach of fraternal obligations we owe to each and every member of a like creditable history and an equally commendable spirit and character. Such neglect would at the same time have deprived this association and its membership, who survive him, of a worthy opportunity to reflect an honor not only upon themselves and their organization, but as well the profession to which they belonged.

Thomas Croswell was born at Mercer, Somerset County, Maine, on June 22, 1814, and died at Streator, Ill., October 5, 1908, at the ripe old age of 94 years. Unfortunately, for the purpose of a more elaborate sketch, we possess at hand no account of his boyhood or early years of maturity. From his New England

parentage and rugged locality and early date of his birth, it is but fair to assume that his formative years were spent among surroundings and scenes likely to give firmness of conviction to his character, and, although not of large frame or mould of stature, nevertheless with physical status of vigorous bodily health and mental stamina with proficient capabilities of effort and endurance that might be said to have well nigh reached perfection in a single individual; the correctness of which assumption has long been well affirmed in the marvelous vigor and persistent vitality he had continued to maintain to the very end of life.

We first notice him as a medical student of Bowdoin College at Brunswick in his native state, which school he entered the year following the retirement of Prof. Henry Wadsworth Longfellow from the faculty of that institution, and from which he graduated in September, 1838, at the age of 24 years. Soon after graduation, he was united in marriage to Miss Henrietta Owens, of Brunswick, Me., where he had also entered upon the practice of his chosen profession, almost under the shadow, as it were, of his alma mater and where he subsequently so continued for sixteen years. Two children were born to such union, one of whom only, Mr. J. T. Croswell, of Pontiac, Ill., now survives his parents.

Mrs. Croswell some years later having been removed by death, a year after her decease the Doctor was again united in marriage, this time to Miss Martha D. Norton, of Farmington, also in Maine.

About 1854 or 1855 he left his native state and removed with his family to Illinois; first locating at Watseka for a year or more, when, during the late summer of 1856, he removed to Pontiac, where he subsequently continued the practice of his profession, as well as conducted a drug store, for about twelve years. He removed to Streator in 1868, since which time, and until his retirement in 1877, he had given practically his entire time to the drug trade in that city. Although never further an active practitioner of medicine, nevertheless he had not relaxed his old-time interest in his early profession or its welfare and progress.

He was again sadly bereaved by the loss by death in 1906 of his second wife, at which time he had himself reached the advanced age of ninety-two years. To this latter union there had been born six children, three only surviving his decease, viz., Mrs. Henrietta E. Wells, of Streator; Mrs. Susan T. Moore, of Los Angeles, Cal., and Mrs. Fannie M. Elder, of Watseka, Ill. A son, Clarence, of the second union, had succeeded him in the drug trade in Streator in 1877, but had passed away some years prior to the death of the father. Following the decease of his last wife he took up his abode at the home of his daughter, Mrs. Wells, of Streator, in which city he spent in all about forty years of his life and where, after several months of illness, he at last passed away at 2:45 a. m. on the date heretofore mentioned.

In the later years of his entire retirement from business responsibilities his mind seemed to revert more and more to his earlier profession. He finally became a constant attendant upon the meetings of this association and likewise of the medical society of his own county. It was at the meeting of this organization in 1905 that, at the instigation of the writer, this grand old man and venerable physician was made an honorary member thereof, a compliment ever heartily appreciated by its recipient, as was manifested on many more than a single subsequent occasion.

His physical and mental vitality was a continued surprise to his intimate friends and associates and a source of wonder to those of younger generations in his own profession who best knew him. Scarcely more than a year or two since he made an extended trip to the Pacific Coast, where a daughter resides, with unalloyed pleasure to himself and with no detriment to his physical energies. A year since he was in attendance, as usual, at the last annual meeting of this association at Sterling, where he then related some of his professional experiences of long past years, although the weather was somewhat cold and rigorous; nor was he satisfied to seek retirement or rest at the close of the exercises, but insisted on doing so and did participate in the social entertainments that were continued to a far later hour. Dr. Croswell, like our former respected member of

many years' experience, Dr. Boal, of Lacon, who had long been the oldest living graduate of the Medical College of Ohio, had himself for years enjoyed a similar distinction as the oldest living alumnus of the Medical Department of Bowdoin College. But a very brief period only before his demise he had written to his alma mater an extertaining reaffirmation of his continued interest in that venerable institution of learning. Says a late issue of the *Bowdoin Orient*, of Brunswick, Me.: "The college librarian recently received an autograph letter from the oldest living graduate of the medical school, Dr. Thomas Croswell, of Streator, Ill., who, at the advanced age of 94, writes entertainingly of his continued interest in this institution. Dr. Croswell began his studies at Bowdoin the year after Professor Longfellow resigned his professorship here." That the Doctor, not unlike most other persons of greatly advanced years, although himself generally in the usual enjoyment of robust health, often realized that he was but calmly awaiting a final summons hence, is significantly in evidence, since in a recent communication accompanying the gift of his photograph to the writer, and which was inscribed as late as April 24 last, a date just before the onset of his final illness, among other things almost prophetically said: "I hope to meet you again before life closes, but I know how uncertain our life is. The wonderful machine which has been given us to dwell in during our mortal pilgrimage must, like all earthly things, grow old, and some portion which is beyond the skill of the physician to repair, give way and soon the whole machine becomes a mass of ruins. My own heart, which has had no vacation for ninety-four years, shows symptoms of failure, so I feel that at any time I may hear the summons:

"Look not mournfully on the past.
It comes not back again. Wisely improve the present, it is thine;
Go forth to meet the future with a wise and manly heart."

So lived, reasoned and acted our venerable and venerated friend and colleague, then (a fact unknown to us all) about entering upon the threshold of his final illness.

But a few days later we missed his kindly presence and greeting at our county medical society meeting. An uncontradicted report announced a recent physical indisposition, which finally proved to be the beginning of his last illness, and for weeks following onward to the end his vital forces gradually and continuously weakened without any permanent recuperation. Sometimes suffering, but generally free from pain, he continued to steadily sink away toward that undiscovered country from whose bourne no traveler returns.

Death, the great leveler of human existence, then entered upon the scene, severing the last thread of physical vitality and of a well preserved mental activity, that had continued in unbroken clearness and ability throughout more than ninety-four years of vigorous life and energy; and then the flickering vital spark had fled and the lamp of his long and useful life had gone out forever.

What an honor to our profession and to those of us who had possessed the opportunity and privilege to have been associated with such venerable, exemplary and useful members as the late Drs. Boal and Croswell. Both were men of similar light physical stature but continued exalted mental activity, of like genial spirit, with minds stored with a fund of practical information, the result of long years of observation and accumulation. It was an incomparable delight to be permitted to enjoy their conversation and to hear their relation of fact and experience of generations long since passed away, bringing vividly back the past in immediate touch with the present, as if actually before the vision, greatly to the instruction and edification of the enraptured auditor. Each was the long time eldest surviving alumnus of his respective alma mater, the former living to the ripe old age of ninety-six and one-half and the latter to ninety-four and one-third years. That Dr. Boal likewise highly enjoyed meeting with his professional colleagues is a well known fact and has affirmation in the following extract from a communication to the writer under date of May 22, 1900, himself at that time about the same age of 94 years: "The (late) meeting of the Illinois State Medical Society (at which he had just been in attendance) was a great success. It has added three years to my long life." As a singular coincidence, it might be

here remarked, that his own death eventually took place but a few days over three years from the date of such declaration.

The writer is pleased to be able to further state that he is likewise in possession of an excellent photograph presented to him by Dr. Boal of himself, also a later autograph letter inscribed under date of February 7, a short time only prior to his demise in 1903. The photographs of these two venerable physicians are herewith submitted for the inspection of those present.

In closing this very incomplete sketch, it might be added that the medical organization which has brought together and for several years borne on its roll of active and interested membership the names of two such ancient and honorable worthies of our profession as Drs. Boal and Croswell, should need no apology for its existence or continuance or be required to affirm its usefulness by other evidence. The legality of their noble lives and the example of their continued interest in their chosen profession may well serve as a bright and shining light to all those who may have come after them. In the closing of each of their extended lives has not indeed the saying found in the Book of Job been aptly fulfilled, viz.:

"Thou shalt come to thy grave in a full age, like as a shock of corn cometh in in his season." (Job, v, 26.)

RESOLUTIONS TO THE MEMORY OF DR. THOMAS CROSWELL.

WHEREAS, We have been informed that our late honored, venerable and beloved member of the North Central Illinois Medical Association, Dr. Thomas Croswell, passed to the future life at his home in Streator, Ill., on October 5 last, at the ripe old age of more than four score and ten years; therefore, be it

Resolved, That we who survive him will long cherish fragrant memories of our deceased member and his excellent and amiable traits of character displayed throughout a long and useful existence, as a constant reminder of our cordial and friendly relations with us in this life. That his life's activities, extending over almost a century of continued and unflagging effort of body and mind, have ever been a stimulus of admiration to his colleagues and a source of great incitement to usefulness of spirit and a continued inspiration to us in our daily round of professional and other duties of life; that as members of this association we esteem ourselves not only fortunate in having been permitted to enjoy his acquaintance and friendship in the past, but at the same time we consider the deprivation henceforth of his presence with us as an irreparable misfortune to those of us who remain; and

Resolved, That we would extend our united sympathies to his afflicted relatives and friends, who survive him, in the great loss we have all sustained.

WM. O. ENSIGN, M.D.,
For the Committee.

There being no report from Dr. Ross upon the death of Dr. J. W. W. Whitmire, of Forrest, Dr. Wm. O. Ensign, at the request of the secretary, kindly prepared and placed in the hands of the secretary later on the following:

JOEL WALLACE WHITMIRE, M.D.

Dr. Whitmire was a son of Dr. James Sidney and Siduah Robinson Whitmire, and was born at Metamora, Ill., October 25, 1851. He died at Forrest, Ill., June 1, 1908, at the age of 56 years. He came of a family of three sons and one daughter, all of the sons following in the professional footsteps of the father by, in turn, entering the medical profession. They were as follows: Joel Wallace, the subject of this sketch; Clarence Leonard, who practiced his profession for a time at Sublette, Ill., whence he removed to Waverly, Iowa, where he died quite suddenly, some years since, in the very prime of his usefulness, and Zachariah Lincoln, who, after graduating in medicine, located at Urbana, Ill., where he passed away but a few years later and after a comparatively brief term of professional service.

The daughter, Miss Minnie Whitmire, was many years ago united in marriage to D. D. Fairchild and is now a resident of Forrest, Ill., as is the venerable mother of the deceased, who at eighty is enjoying excellent health for one past four score years of age. The father, Dr. James S. Whitmire, an eminent physician and surgeon of the state, in his day, who had for very many years resided

and practiced his profession at Metamora, died some years since at a ripe old age after a long and successful practice of about fifty-six years. Two uncles and one cousin of our subject were likewise physicians, the entire seven of the name having been graduates of Rush Medical College. For many years one of the uncles, Z. H. Whitmire, also practiced at Metamora. All of the seven have now passed away save one, Dr. Wm. L. Whitmire, the cousin above mentioned, now a practitioner of Sumner, Iowa. The father and the first two named sons were members of the North Central Illinois Medical Association, the father being one of its founders and its first permanent president in 1874. Dr. Joel Wallace Whitmire was an early member, its secretary in 1884, and became a life member in 1900 by reason of twenty-five continuous years of faithful membership therein. J. Wallace Whitmire, as he was best known to many of his acquaintances, passed through the public schools of his native place, attended a military school at Fulton and later Eureka College for two years, when he took up the study of medicine in the office of his father at Metamora. He soon entered Rush Medical College and subsequently graduated therefrom with the class of 1877. He then practiced at Metamora for a season, but finally removed to Forrest, Ill., in 1886, since which time he had remained a resident of that place.

On September 13, 1877, in the fall after his graduation, he was united in marriage to Miss Laura Northcotte, of Christian county. To this union were born two children, viz., a son, J. Sidney, and a daughter, Merry Jane.

Having contracted pneumonia on January last the Doctor's affection was subsequently followed by a continued debility from which a complication of diseases resulted, which, in time, involved the heart, stomach and liver. Against this unfavorable condition of health he bravely struggled, in an effort to overcome his physical infirmities, for about five months, but the contest proved to be an unequal one and he was at last compelled to succumb to the inevitable result.

Dr. Whitmire was a man always interested in educational and other public affairs and at times had served in positions of usefulness to the community in which he lived and in capacities for promotng the enterprises and welfare of those about him, such as president of the school board, or as a member of the board of trustees of the village or city in which he resided. He was a Mason, a Knight of Pythias, an Odd Fellow and a Modern Woodman and took great interest in such organizations, being finally laid to rest under the auspices and with the ceremonies of the first named order, amidst almost a bower of beautiful and fragrant flowers.

It has been testified of him that "he was a man of fine intellectual attainments and broad liberal views, that as such he had filled a large place in the community as a citizen as well as a practicing physician." He was a long time member of the County Board of U. S. Pension Examiners and was also a member of the county, district and state medical societies, as well as a local surgeon for the T. P. & W. and Wabash R. R. companies. While not a frequent attendant at its meetings, he was an interested and continuous supporter of this association, and after a quarter of a century of such service he had earned a life membership therein. His death, although for some time anticipated, when it finally came, was a distinct shock to his home community and a profound loss to his friends and those who knew him most intimately. "A good son and brother, an affectionate husband and father and an excellent and beloved citizen has passed from the community" in which he had so long lived and labored. "His genial and kindly personality will long be missed" from among his people and by his co-laborers of the medical profession, with whom he had so many years been in active and cordial association and good fellowship.

WM. O. ENSIGN, M.D.,
Special Committee.

RESOLUTIONS OF RESPECT TO THE MEMORY OF JOEL WALLACE WHITMIRE, M.D.

WHEREAS, Our long time and highly respected fellow member, Dr. J. Wallace Whitmire, of Forrest, Ill., passed from this life at his home in that city on June 1 last; therefore, be it

Resolved, That we, the members of the North Central Illinois Medical Association, who survive him, feel that in his death we have lost a faithful member and a genial and highly respected brother of our profession. That we would preserve his memory as of one who patiently labored and faithfully discharged his duties without ostentation or as if seeking only fulsome and self-desired praise for his efforts; therefore, be it

Resolved, That as a member of his profession he served his community long and well and wrought in a manner to command the respect and esteem of all those for whom he labored, as well as of the people among whom he dwelt; and

Resolved, That the members of this association will ever cherish recollections of his many excellent qualifications of mind and heart as a fragrant memory of his worthy character while in their midst, and would sincerely attest their deepest sympathy with the stricken relatives and friends in the loss we have all sustained.

The regular program was taken up as follows:

"Newer Methods in the Treatment of Sciatica," D'Orsay Hecht, M.D., Chicago.

He called attention to the fact of two great neuralgias—trifacial and sciatic. In diagnosing must exclude tabes dorsalis, diabetes, arthritic hip, etc. Then can use the injection method of normal salt solutions, injecting 30 to 120 cubic centimeters, perineural; can repeat, using 15 cubic centimeters. Solution should be body temperature; uses needle 12 centimeters long. Relief is very marked. Dr. Hecht has injected 22 cases. Discussion by Dr. John Ridlon and Dr. J. F. Percy, the former calling attention to necessity of careful differential diagnosis of acute chronic gonorrheal rheumatism, disease in lumbar spine, and Pott's disease especially.

Dr. Hecht in closing discussion called attention to danger of injecting alcohol into the nerve, as degenerative processes would ensue; grave disabilities have occurred in cases in France. The depth required to go varies from 5 centimeters to 10 centimeters; average, 7 to 7½ centimeters.

Dr. C. A. E. Lesage of Dixon read an interesting paper upon "The Necessity of Early and Frequent Examinations of the Ears of Children in Acute Infections," which was discussed by Drs. Guthrie and Griswold with Lesage to close.

Dr. P. M. Burke, of La Salle, then read a paper on "Appendicitis." He thinks meat eaters are more prone to appendicitis. United States leads the world in use of meat and also in appendicitis. Very rapid pulse indicative of serious trouble. A kinky appendix is often unattended with rigidity. Two cardinal signs are general pain which after 12 or 15 hours localizes over McBurney's point and rigidity of rectus muscle. While all are operative cases, there are two ways of treating them, and Dr. Burke prefers the rest treatment, using morphin for pain, daily rectal injections and nothing by mouth until two days prior to operation, when milk or beef tea may be used. Discussion by E. B. Owens, J. F. Percy (who does not approve of the morphin, but wraps in hot towels and if the patient is not relieved an enema is given of one ounce of whiskey in normal salt solution), Cressman, L. D. Howe, Scott of Princeton and Bayard Holmes, who says no medicine, no morphin, and will operate when diagnosed or have nothing to do with the case. Dr. Burke closed the discussion.

Dr. E. P. Cook then read a paper on the following subject: "Local Anesthesia for Major Surgical Operations." He uses two-tenths of one per cent of cocain in normal salt solution at body temperature. A preliminary injection of one-eighth of a grain of morphin one-half to one hour before the operation. Discussion by Drs. Griswold, E. S. Murphy and J. F. Percy. Dr. Cook closed the discussion.

An intermission of five minutes was declared in order that those present might sign the register, pay their dues and select a nominating committee. Being called to order and the roll of counties called, the following were named as a nominating committee: Bureau, M. J. Coveney; De Kalb, Keizer; La Salle, Ensign; Lee, Lesage; Marshall, Kemp; Grundy, Kendall, Livingston, Putnam, Whiteside and Woodford not represented.

Dr. Bayard Holmes then read the following paper on

SOME SIDELIGHTS ON CHOLECYSTITIS.

BAYARD HOLMES, M.D., CHICAGO.

I know of no more interesting pathological problem than that of the infected retention cyst. It matters not whether this cyst be in a secreting gland of the skin or in one of the appendages of the respiratory or of the intestinal tract. The same elements prevail, and the same logic finds a place. The formula of indications is the same. The value of the several pathological increments alone are different. In our attention to the local effect of infection we are too often forgetful of the constitutional effects. An infected appendix, for example, produces other symptoms than perityphlitis and belly-ache. Cholecystitis is not synonymous with gall stones, and gall stones may exist without cholecystitis. All the local symptoms of gall stones, and of cholecystitis, even the much-looked-for jaundice, may exist, and the operator find a simple appendicitis or a duodenal ulcer.

Cholecystitis is a much more common disease than either surgeons or practitioners are willing to admit. Its effects are far more often toxemic and constitutional than local and inflammatory. The diagnosis in the latter case is relatively easy and in the former instance proportionately difficult.

In this broad conception of cholecystitis diagnosis becomes difficult and time-consuming. A single observation, a single visit or office consultation rarely suffices to furnish a basis for diagnosis. In typical gall stone attacks the diagnosis is brought with the patient. To determine astronomically the time requires but a single observation upon the moon and an adjoining fixed star. But the place and identity of a comet requires numerous equally exact observations and measurement, and protracted computation.

The symptoms of gall stones or of acute cholecystitis have been so thoroughly presented that the disease in this form is almost unmistakable. The chronic disease, however, is manifested only in remote and almost irrelevent symptoms. In studying the condition of this viscus, after years of disease, it is found to have undergone changes similar to those of the appendix in appendicitis, or the mucosa in the disease of other mucous cavities. The outlet is partially but not completely obstructed. All the mucous glands of the gall bladder are greatly hypertrophied and their secretion is enormously increased. The submucous tissue, containing the lymph apparatus, is greatly exaggerated, and the surrounding and nourishing blood vessels are hypertrophied. The muscular elements which are normally almost microscopic are greatly thickened and infiltrated with an increasing amount of connective tissue and vascular elements. The serosa alone remains unchanged, or only vascularized during the course of acute exacerbations. In the neighborhood of the union of the cystic with the common duct, a packet of lymph glands, scarcely distinguishable in the healthy, are excessively enlarged, sometimes a half an inch in diameter. The adjacent liver substance is noticeably pulled out into a tongue-like projection, presumably by the repeated distensions of the gall bladder, or by pressure upon the central blood vessels and ducts, to which this segment is tributary. This is known as Reidel's lobe. The hepatic elements of this lobe are often cirrhotic. If the blood vessel which supplies the gall bladder is examined microscopically, or even any of its branches, it is found in a state of advancing arterial-sclerosis.

The presence of stone in such a gall bladder is only of passing interest. It is an incident similar to the appearance of ulcers of the mucosa, extravasations into the sub-mucosa and muscularis or complete defects of all the coats of the gall bladder, and the formation of an extra-cystic lake of the contents of the gall bladder. They are like the perforations which occur into the colon, the duodenum, or the stomach. They are no more essential to the disease than adhesions to the duodenum, the stomach, or the gall bladder.

Our ancestors paid the greatest attention to the progress of gall bladder diseases. They reckoned that the stones showed a natural tendency to form in this viscus and that they ordinarily passed with more or less distress to the cystic duct through the common duct into the duodenum and at last out into

forgetfulness. They considered the possibility and probability of a perforation of the gall bladder through the liver and diaphragm into the lungs and outward through a bronchial tube. They watched the attachment of the gall bladder to the abdominal wall and the perforation and discharge of the stone through this area of protective adhesions into the round ligaments and out through the umbilicus, or into the sheath of the rectus and the discharge of the stones in the groin, or even at the knee. Such studies showed the grave import of this disease. We now know that long before any of these tragedies eventuate the toxic elements gendered in the gall bladder have poisoned the whole circulatory, nervous and glandular apparatus, and rendered the painless patient anything but sound and well.

While the disease is still confined to the gall bladder and while its location is wholly unrecognized by the patient, the toxicity of the blood has vitiated the nutrition of the central vascular apparatus, a central endarteritis has set in, even in middle-aged or young patients, and patches of atheroma are found in all the larger blood vessels, as far as the iliac and carotid. The heart muscle has undergone a degenerative process, which terminates in the so-called brown atrophy of the heart. The presence of bile pigment which passes through the unhealthy mucosa of the gall bladder and the pigment liberated by the presence of the toxins in the blood give the skin a blotched and dusky hue, which in older people often suggests carcinoma. The stream of toxins from the gall bladder which is naturally poured into the same lymph currents as those of the pancreas modifies the production of lipase and materially influences the digestion and nutrition. The patient either grows fat with a stimulated pancreas under an increased activity of the lipase, or grows thin by contrary process.

Where the symptoms of a toxemia prevail, in a vitiated nutrition, a tachycardia or a fluctuating high blood pressure, with the history of the ordinary precedents of gall bladder disease and the finding of a Reidel's lobe, there is but one step further to a diagnosis, and that is an exploratory incision. Weeks and even months may be necessary to make the diagnosis.

When it is determined that a cholecystitis exists the fact that many cases recover under improved diet and surroundings must not be forgotten. The reputation of springs and cures is not based upon bluff or credulity alone. The outdoor life, the large quantities of saline waters, the purgation, the moderate exercise and the monotonous diet do relieve and occasionally cure. It is very doubtful whether stones ever pass or not. Only once in all my experience have I felt absolutely certain that a gall stone passed through the intestinal tract by way of the common duct and duodenum. The stones may remain and the gall bladder may be well. The interior of the gall bladder must be thought of as analogous to the skin of the adolescent's face when covered with acne. It gets well sometimes, and sometimes almost without a scar. So it is with the gall bladder. I am accustomed to recommend outdoor sleeping and living, a vegetarian diet, frequent doses of the phosphate of soda, vigorous hydrotherapy, and moderate exercise. Under this treatment a large number of the earlier, or as I am accustomed to say, suspected cases, recover. Even after violent colics and in one case after an empyema of the gall bladder, this method furnished relief and secured health for eight years. At the end of that time the stone was forced by the contracting parchment-like gall bladder against the common duct, and symptoms again arose, which necessitated a cholycystectomy and the removal of the stone. There will still be a large proportion of patients who are not bettered by rational medical treatment. These patients should then be subject to cholecystostomy.

The preparation of the patient for this operation ought to be thorough. The competency of the heart and kidneys, the coagulability of the blood and the psychic condition of the patient should be thoroughly studied. The fact that the heart is rapid and irregular is not a contraindication to a short, direct and curative procedure. If the blood coagulates promptly and there is no tendency to nephritis, ether is a safe anesthetic. It should not, however, be administered recklessly or out of the surgeon's observation, but in the operating room and

after the ordinary antiseptic preparation of the field of operation. I believe that gas is dangerous in these cases, even for three or four minutes, and especially if it has to be administered a second time. Under no circumstances, it seems to me, should chloroform be given where gall bladder disease exists. The pathological conditions are identical with those of delayed chloroform poisoning, and similar to those of acute yellow atrophy of the liver.

In patients that weigh less than 150 pounds a local anesthetic is adequate, providing the relations between the surgeon and the patient can be established upon that plane of confidence necessary for the procedure. In the aged and in a number of much younger patients I have had no difficulty in performing cholecystostomy by the use of Schleich's solution. The skin alone needs thorough infiltration. The incision is painless. There is a painful spot somewhere in the sheath of the rectus muscle. The peritoneum and the gall bladder itself are without sensibility, except when pulled upon. The needle and forceps and even the scissors in opening the gall bladder produce little pain.

The operation should be performed with the patient upon a table slightly elevated at the head, and the pelvis and thorax moderately over-extended on a pillow. The exaggerated over-extension which may be attained only when the patient is fully anesthetized is a far more serious procedure in itself than the cholecystostomy. This is especially the case in the aged.

The incision which seems to me most indicated is about an inch and a half long on the outer border of the rectus, just below the ribs, and represents the longitudinal portion of Bevan's S-shaped incision. An inch and a half is enough and more than that is only necessary in fat people or when other maneuvers are necessary. The advantages of the short incision are too obvious to mention. One might, however, speak of the ease of excluding other viscera, the fact that it is unnecessary to close it after the operation is finished. It is unnecessary to keep the patient in bed after the operation, it shortens the time of operating, and it makes the introduction of sponges and the consequent irritation of the viscera unheard of.

I am accustomed to pass the finger into the abdomen, feel the gall bladder, locate its fundus, grasp the fundus on a smooth curved artery forcep, bring it into the wound, put a stitch on either side of the artery forcep through the wall of the gall bladder and into the peritoneum and fascia of the rectus on each side; open the gall bladder between these two stitches, remove the first artery forcep and grasp the upper and lower corners of the wound, evacuate the gall bladder, introduce a tube five or six inches long and as large as the index finger, sew it with a single stitch to the skin on the right-hand side of the wound, cut it short, and cover the whole with a large absorbent dressing. This operation, ordinarily, requires no more than four to ten minutes, when ether is used, but when a local anesthetic is administered it takes ten or fifteen minutes longer.

The care of the patient after the anesthetic and after the operation is very important. He is placed in a semi-recumbent position at once, and as soon as he is conscious he is allowed to wash out his mouth and sit in a rocking chair or sit up in bed, as he prefers. Frequently there is no vomiting at all. When there is vomiting, the washing out of the nose and mouth with salt and water, to which a few drops of vinegar have been added, seems to be helpful. I frequently allow the patient to take a large quantity of water with the express purpose of seeing it expelled shortly with great relief from the nausea. The windows are kept open and the room cold as if the patient were being treated for tuberculosis. On the second day the patient is urged to walk around and generally does. And on the third day he is dressed for company and has the liberty of the hospital. This procedure makes the cure quick and, I believe, diminishes the tendency to pneumonia, phlebitis and other complications of the abdominal section. I have never seen any bad effects come from this method, which is particularly indicated in the aged and in all patients where the heart is weak and the blood currents likely to be too slow.

I operated upon P. A., a vigorous but somewhat dissipated young man of 26, in 1895, for a perityphlitic abscess which extended entirely across the pelvis. Drainage was made on both sides, the appendix removed, and the patient recovered without complication. Two or three years later he complained of stomach trouble, palpitation of the heart, and great disturbance in the upper abdomen. These occurred with increasing frequency and after two or three years by violent attacks. I examined him a number of times, and found an area of anesthesia in the right scapula line, over the ninth and tenth ribs. A distinct Reidel's lobe, an extremely irregular heart, a tinged sclera and skin, and a marked hyperacidity of the stomach contents. In one of the attacks in 1902 there was a jaundice which lasted five or six hours. After this, the most prominent symptom was a distress about the heart, with a rapid pulse and a choking sensation, which extended into the right shoulder. All medical treatment was fruitless. In December, 1905, I opened the gall bladder, as described above, found it more than a quarter of an inch thick, and evacuated several hundred small gall stones. The patient left the hospital three days after the operation and attended an anniversary dinner, of which he partook freely. His tachycardia and the irregularity of the pulse had practically disappeared, and the large meal brought no distress. He has since gained thirty-five pounds in weight, and is completely relieved of all his symptoms.

1. I urge upon you the consideration of the thesis that cholecystitis is a much more common and serious disease than gall stones.

2. Cholecystitis is the beginning of all gall stone disease and of most of the other inflammatory processes in the upper abdominal cavity.

3. Cholecystitis when properly treated is curable, either by dietetic and hygienic means, or by operative measures.

4. Cholecystostomy seems to be adequate in most cases, but cholecystectomy must be performed when the gall bladder is gangrenous, or when the duct is completely obstructed.

5. Cholecystectomy should be performed as a secondary operation and several months after the primary cholecystostomy.

The discussion was opened by E. B. Owens, followed by J. F. Percy and Steele, Dr. Holmes closing. He stated that of 21 cases ranging in age from 35 to 82 on which he had operated, one died upon the table and one required a second operation.

Adjourned at 6:05 p. m. to meet at 8:15 p. m.

At 6:30 p. m. the visiting physicians and their ladies met at the Harris restaurant, where a bountiful repast had been provided by the Bureau County Medical Society, which was thoroughly enjoyed by all present.

EVENING SESSION.

At 8 p. m. a public meeting was held in the main auditorium of the Congregational Church. The address of welcome was given by Professor McGill, which was responded to by President E. S. Murphy, who also gave the president's annual address. This was followed by a couple of solos, after which Dr. John Ridlon of Chicago gave the general public address. Subject, "A General Consideration of the Needs of Crippled Children, Their Treatment and the Results to be Expected."

WEDNESDAY MORNING SESSION.

Meeting was called to order at 8:30 by the president and the nominating committee reported as follows: Dr. Priestman had taken the place of Dr. Coveny of Bureau County.

The nominating committee of the North Central Illinois Medical Association met December 1, 1908, after adjournment of the evening session of the society. Dr. Ensign of Rutland was elected chairman and Dr. Priestman of Neponset secretary of the committee. Your committee would recommend the following named be elected as officers of the society for 1909:

* For text of paper see page 409.

Dr. J. F. Percy of Galesburg for president, Dr. F. A. Turner of Sandwich for First Vice-President, Dr. A. E. Owens of Princeton for Second Vice-President, Dr. George A. Discus of Streator as secretary and treasurer. As board of censors, Dr. J. J. Pearson of Pontiac, Dr. J. M. Kaiser of Somonauk, Dr. J. C. White of Seatonville, Dr. C. A. E. Lesage of Dixon, and Dr. J. I. Knoblauch of Metamora. As committee on necrology and biography: Dr. F. C. Robinson of Wyanet, Dr. Frank Anthony of Sterling, Dr. H. M. Ferguson of Morris, Dr. C. H. Kemp and Dr. E. W. Weis of Ottawa.

There being no invitation for place of meeting for next year, that matter was left open by the committee.

Your committee would recommend that the secretary of the society be empowered to make additional appointments to the committee on necrology and biography as occasion may require. The committee recommend that the following resolutions be adopted: Moved and seconded that the report be accepted and that Dr. Ensign cast the ballot for the officers named by the committee, which was done and the officers declared elected. Moved and carried that the secretary be empowered to add to the necrological committee at any time as deemed necessary. The following resolutions prepared by the nominating committee were read and unanimously adopted:

Be It Resolved, That its members extend to the citizens of Princeton our sincere appreciation of the hospitable welcome extended to our association during its annual meeting in this city of Princeton. Be it further

Resolved, That we extend our thanks to the Bureau County Medical Society for the excellent banquet and entertainment which we were privileged to enjoy. And be it further

Resolved, That our gratitude to the officials of the First Congregational Church be expressed in our humble manner for the use of their society's beautiful building during the meeting of our association; and, lastly, that we fully appreciate the efforts of the local committee in making this meeting a complete success.

J. S. PRIESTMAN, Secretary of Committee.

There being no other unfinished business, the regular program was opened by Dr. C. C. Rogers of Chicago, with a paper on "Surgery of the Brain."* Discussion by Drs. E. P. Cook, Lesage and Ensign.

Dr. Robert H. Good then gave an interesting talk on the symptoms and treatment of "Frontal Sinusitis." He exhibited some beautiful specimens and some special instruments which he had made for this operation. Discussion by Drs. Steele and others.

It was moved by Dr. Flint that inasmuch as Drs. Rogers, Good and Ridlon of Chicago had come down and mingled with us and given us three most excellent papers, that we extend to them by rising vote our thanks and that they each be made honorary members of the North Central Illinois Medical Association. Carried, unanimously.

Dr. C. M. Cheadle read a paper on "Conduct of Normal Labor," which proved of great interest.

THE CONDUCT OF NORMAL LABOR.

C. M. CHEADLE, M.D., ASHTON.

The question may arise as to whether it is proper for a body of scientific physicians to consider the subject of normal labor. If the old grandmothers can attend their daughters and grand-daughters in labor and all go well, is it necessary that physicians, who are educated and trained in hospitals and colleges, should devote any part of the program of their meetings to a consideration of how to conduct a case of normal labor? Facts which may be easily obtained seem to indicate that somebody, somewhere, should consider this subject, and consider it seriously. The number of deaths from puerperal causes is appalling. The following table, which is compiled from the records of the state board of health, speaks for itself:

* For text of paper see page 431.

TABLE SHOWING NUMBER OF DEATHS EACH YEAR IN THE STATE OF ILLINOIS FROM PUERPERAL CAUSES, INCLUDING INFECTION, ECLAMPSIA AND HEMORRHAGE AND OTHER CAUSES, FOR THE YEARS 1902 TO 1907, INCLUSIVE, AS REPORTED TO THE STATE BOARD OF HEALTH.

	1902	1903	1904	1905	1906	1907
Infection	352	383	406	380	322	333
Eclampsia	70	156	146	127	135	130
Hemorrhage	51	33	40	52	42	47
Otner causes	218	207	187	184	193	214
Totals	691	779	779	743	692	724

You will notice that the statistics offered are not comparative, and are not expressed in percentages, in which form they so often mean practically nothing. But we are up squarely against this fact that in the year 1902 in the State of Illinois 691 women met death from puerperal causes. This number was actually reported and it is doubtful if all cases were reported. In 1903 the number was 779; in 1904, 779; in 1905, 743; in, 1906, 692; in 1907, 724. The total number of deaths for the six years was 4,408, an average of 735 for each year. Of these deaths 2,176 were caused by infection and 764 from eclampsia. Thus there is an average annual death rate from infection for the six years of 363, and from eclampsia of 127.

I reason that the above facts furnish sufficient ground for a consideration of this subject at this time. Surely if all physicians always did their best to prevent the death of their patients no such records as these could accumulate.

My consideration of the subject of normal labor is not offered as a comprehensive discussion of the subject, but I have aimed to emphasize those points which seem to me to conduce most to the production of mortality statistics. From the figures quoted above it is seen that the two leading causes of death are puerperal infection and eclampsia. Of the total 4,408 deaths from all puerperal causes 2,912, or over 66 per cent., resulted from these two causes. Of all puerperal causes of death I consider these two the most readily preventable. Therefore, in my consideration of this subject I shall keep before me the thought of emphasizing the prevention of infection, the prevention of eclampsia depending entirely upon the management of pregnancy rather than labor. It has been said that every time a woman dies of puerperal infection that someone else should be hanged. This is not strictly true, but emphasizes the truth that there is almost never a good cause for a woman dying from infection. I know that there are cases for which no one is to blame, but these are the exception.

It is not proper to suppose that all deaths from puerperal causes result from a misconduct of normal labor, yet if the facts were traced down, misconduct of normal labor was a very large factor in the production of the deaths above referred to. Cases of infection arising in cases of normal labor I positively know to be all too frequent. A case of normal labor is often better off in the hands of one of the old grandmothers than in the hands of some physicians. The grandmother waits for Nature to do the work. When the baby comes she cuts and ties the cord and cares for the baby. When the placenta is expelled she removes it and cleanses the patient. The subsequent care does not include all modern aseptic and antiseptic measures, but, as the woman was not infected, she makes a good recovery. Suppose one of several doctors that I know had been called. Of course he must be scientific. He makes repeated digital examinations to determine how the birth progresses. His fingers are faultily cleansed. The external genitals of the mother are not cleansed at all. The birth takes place just about as it would have done had he not been there. After the child is born he is in a hurry to get away. To wait for the placenta is too slow. He introduces his finger to assist in its removal. He tells some of the attendants to wash the patient with a carbolic solution and hasten away. What has he done more than the grandmother would have done? Only one thing, he infected his patient.

The conduct of normal labor is a subject to which I have devoted considerable attention and in the course of ten years in general practice I have developed a technique which I shall give you. It is one which I believe to be practical. It seems to me to be freed, as much as is consistent, from what may be termed hospital formalities. It seems to me that many physicians, realizing that they cannot carry out in general practice the hospital technique as given in the text-books, drop to the other extreme, and do not use enough precautions. I have never tried to carry out all the elaborate technique of the text-books, but have adopted such part of it as I think I can use to advantage. To this I have added some things from my own experience.

I might remark in passing that a lazy doctor makes a poor obstetrician. It is so easy to omit important details. I verily believe that one of the reasons why so many women die from puerperal causes is because too many physicians are really too lazy to do the things that should be done. Almost any physician will admit that it is proper to have sterilized hands and a sterile vulvar region and sterile obstetric pads, etc., but these things cost work and time. The careful physician must stay with his patient longer than the careless one does. Superstition and ignorance must often be overcome by diligence and patience. The physician has a large duty to perform in instructing his patients in ways of safety. Eternal vigilance and diligence are the price of a clean record as an obstetrician.

The technique I use is somewhat as follows: In the first place, I have my patient come to confinement in the best possible condition. The general care of pregnancy has a very important bearing upon the puerperal period. The care of pregnancy is a subject upon which I would very much desire to touch, but one which does not properly come within the scope of my paper. I aim always to instruct my patients to call me early. If the patient lives a long distance in the country I tell her to call me when the first symptoms of labor appear.

Preliminary Preparations.—After I arrive at the bedside I try to estimate about what is the stage of labor, if there is time to make proper preparations. You all know that we are called sometimes to places where no preparation worthy the name has been made. One has simply to go ahead and make such preparation as he can. If he has time and inclination he can provide many means of safety for his patient, even under the most unfavorable circumstances. An abundance of boiling water is generally my first thought. Then clean basins, soap, wash cloths, etc. If a trained nurse is present of course the preliminiaries may be safely left to her. I try to have three basins. All are carefully washed with soap and water and well scalded with boiling water. I then make a 1 to 1,000 bichlorid solution with boiling water and drop a clean wash cloth into it. I also pour a quart of boiling water over another wash cloth in another basin. A clean soap dish and fresh bar of soap are obtained. The third basin is to be used for preliminary scrubbing of hands, the second for final soap and water scrubbing and the bichlorid for final use before all internal examinations.

While water is being heated and before the cleansing of the basins, etc., I generally make an abdominal examination. It is my practice in all cases, where I can, to make a thorough physical examination of the patient a month before confinement. By this means I know the position of the child, and the examination at confinement time will not need to be as thorough as otherwise. If the preliminary examination has been made a vaginal examination at the beginning of labor is seldom necessary. Sometimes it is not anyway, but I have never become sufficiently expert in abdominal palpation as to feel sure of my ground in all cases. So I sometimes make an internal examination to assure myself of correct diagnosis of position and presentation.

Preparation of the Patient.—Where time and circumstances will permit, I always have the external genitals and adjacent parts of the mother subjected to a thorough soap and water bath, followed by a bichlorid bath. A compress wrung from the bichlorid solution is then placed over the external genitals. If a trained nurse is present I turn over this work to her. If not I do it myself. Of course, there should be someone else to do such work but it will not do to trust it to in-

experienced hands. It is often the case that a physician has not done his duty until he has done *more* than his duty.

Either before or after the cleansing of the patient she should be clad in night dress only. Her bed should be prepared in such a way as to avoid soiling of the mattress. A yard and a half of new table oilcloth may be placed over the mattress, a sheet over this, and another sheet folded into eighths so placed as to be under the patient's hips. A pad made of absorbent cotton may take the place of the folded sheet.

I have never devoted any attention to sterilizing of sheets and gowns for confinement cases. I should have no objection to such sterilizing but sterile sheets will remain sterile scarcely longer than it takes to get them into place. It is not necessary that a patient should be infected from unsterilized sheets. The one absolutely necessary consideration is that no infection shall be carried into the vagina by means of an unclean finger. The rectum, with its swarms of infectious germs, is only an inch away from the outlet of the birth canal. It can not be removed. It is very much more important that the patient should be guarded against infection from this source than from non-sterile sheets. The wet bichlorid compress is the best means I know of to keep the parts about the entrance of the birth canal in as nearly sterile condition as may be. If all the folds of the vulva and adjacent parts are carefully cleansed with soap and water and then bathed with the bichlorid solution the wet antiseptic compress, in the course of half an hour, will render the parts practically sterile.

Course of the First Stage.—During the first stage of labor the patient may be allowed general liberty. She should not be in bed except for special reasons. She may be clad in a wrapper or night dress and have a shawl or blanket thrown around her if needed. She should also have stockings and slippers as long as she is up and around. The rectum should be flushed with salt solution and the bladder should be emptied frequently. She should be given a general bath as soon as labor has certainly begun. The general surroundings should be made as pleasant as possible for her and obnoxious visitors should be disposed of in some way. Cheerful conversation may help to divert her attention from herself. Drink may be taken freely but no solid food should be taken.

Conduct of the Second Stage.—During this stage the patient may, under certain circumstances, be up some of the time, but as a rule she should be in bed. The bladder should be emptied often. The progress of the fetal head may be determined with reasonable accuracy without internal examination. Before descent into the pelvis it may be felt just above the pubes. By the time it has passed so low that it can no longer be felt above, it may be felt during the pains just below the pubic bone by pressing firmly on the soft parts. A little later ocular examination can quite accurately determine the progress. Physicians who have been in the habit of depending on the finger in the vagina to tell them of the progress of labor in the second stage will be surprised if they give a little attention to external methods, at how much may be accurately learned without digital examination.

Digital Examinations.—Internal examinations should be made as infrequently as possible. If the vulvar region has been soaked well with bichlorid solution and the hand is properly prepared, I do not consider that a simple examination adds greatly to the danger of infection. In some cases, after I have made an examination at the eighth month, I do not make an internal examination during the course of labor, but I aim always to have my patient in such condition that I can make an examination at any time without much danger of infecting her. I know of no rule regarding the frequency of examinations or of conditions under which internal examination seems to be demanded. These matters must be left to the judgment of the attendant. In cases of prolonged labor I sometimes make several examinations. Slight correction of position of the fetal head is sometimes needed, calling for the introduction of the fingers into the birth canal. There are many other conditions under which internal examination may be necessary. The only rule that I know of is that the examination should not be made unless there is a well defined reason for so doing.

If the membranes do not rupture at the proper time it may become necessary to rupture then. It is sometimes hard to determine just when this should be done. I would generally rather rupture them a little late than too soon. The distended sac should come well down to the perineum before it is ruptured. If the finger fails to cause rupture an instrument of some kind may be needed.

When the head begins to distend the perineum, close watch must be kept to avoid a sudden descent with rupture of the soft parts. During this part of the second stage the vulva should be in full view of the obstetrician. In slow cases I often place a bichlorid compress over the vulva and let my hand rest upon the compress. In this way sudden rapid descent will instantly be recognized. As the soft parts become more and more distended precautions must be taken to prevent lacerations. Many suggestions have been offered for preventing lacerations, but most of them are of very little value. I know of but three which seem of sufficient importance to mention. They are to prevent:

1. Too Rapid Descent of the Fetal Head.—This may generally be easily controlled by resisting the downward movement during the pains, and by administration of chloroform. The latter also assists by promoting muscular relaxation.

2. Too Early Extension of the Head.—The head should be kept well flexed upon the chest until the occiput is past the pubic arch. It should then be extended and the nape of the neck pressed firmly upward against the pubic bone. Should the head become extended before the occiput passes the pubic arch the diameter of the part included in the grasp of the vulvar girdle is increased and the danger of laceration thereby increased.

3. Episiotomy.—This is an operation which I am sure should more frequently be done. Perineal lacerations are so common, and so many women are suffering from the effects of them, that it seems time that more attention were given to taking a woman through confinement safely, not only from the standpoint of her life, but also from the standpoint of her health. The operation is a simple one and is safe. It is certainly very much easier to suture a clean incision than a ragged tear. Also the episiotomy wound is situated in a very much more accessible location than the laceration usually is. The site of the incision should be at the junction of the middle with the posterior third of the lateral half of the vulvar girdle when the occiput is under the pubic arch. The incision should be made in a line with the axis of the patient's body and not in a line with the axis of the pelvic outlet. Incisions may be made on both sides if deemed best. The wounds may be sutured with continuous cat-gut suture immediately after the child is delivered if circumstances will permit, the anesthesia being slightly increased over what it was during the final stage of delivery. In primipara preparations for such operation should be made beforehand.

The position of the patient during the second stage I leave largely to the choice of the patient. If this stage lasts a long time I insist on frequent change of position. I think the lateral position a good one, but the greater number of my patients are in the dorsal position at the time of delivery. Some women say that they can not endure the lateral position during severe pains. In some cases in which the expulsive force of the uterus seems to be unavailing, change of position has seemed to promote progress.

When the head is born it must be supported with the hand. Too great haste should not be sought in the delivery of the body. I generally raise the head well up against the pubic bone and deliver the posterior shoulder first. There are those who prefer to deliver the anterior one first, but I doubt if there is much choice in the matter. The force of the uterus should generally be depended upon to deliver the body. Sometimes it is necessary to hook the finger in the axilla and make traction.

When the child is born it should be turned on its face and partially inverted to allow secretion to drain from the nose and mouth. The finger may be required to remove tenacious mucus. After two or three hearty cries a warm blanket should be wrapped about it, and then placed in the bed between the mother's limbs if she lies on her back. It should be allowed to remain in this position until the after birth is delivered, or until pulsations in the cord have ceased. The child is

then anointed with oil, the cord tied at a convenient point and the child removed from the bed.

The Placental Stage.—I believe that the placental stage is a point at which many physicians fall down in obstetric practice. The vagina is torn and bruised and in a condition favorable for pathologic bacteria to do their worst. If no special pains have been exercised to sterilize the external genitals, the wonder is that the fingers can ever be introduced without infecting the patient. There is seldom any need of introducing the fingers for the removal of the placenta. If it is done it should be only after very careful preparation of the hands. Too great haste is the rule on the part of physicians at this stage. The delivery of the placenta should not ordinarily be expected under thirty to forty-five minutes. During this time someone should keep the uterus contracted by keeping the hand over the fundus. When relaxation of the uterus occurs gentle massage should be used to produce contraction. Should these means fail to deliver the placenta after thirty minutes, Credé's expression method should be used. Too great haste in removing the placenta not only exposes to danger of infection, but to tearing away a piece of the placenta which, remaining in the uterus, gives rise to trouble later. Inversion of the uterus sometimes is caused by traction upon an adherent placenta. Uterine contractions, assisted, if need be, by forcible expression, will generally deliver the placenta whole.

Don't get in a hurry. Your haste will be the cause of some mother's death some time. Whatever is worth doing at all is worth doing well. Let not a desire to get home lead you to slight your duty.

After Care.—The after care of a woman recently confined is another point at which physicians often fall short of doing their duty. I consider the care of a woman following confinement to be just as important as the care of a patient upon whom laparotomy has recently been performed.

Following the delivery of the placenta the vulvar region should be carefully cleansed with a 1 to 1,000 bichlorid solution, and careful examination made for lacerations. Lacerations of sufficient size should be sutured at once unless there is sufficient reason for delay. After the external parts have been cleansed an obstetric pad should be dipped into a hot bichlorid solution of 1 to 2,000 strength and placed over same. A binder is then pinned around the patient only tightly enough to be comfortable. The vulvar pad is then secured in place by a clean cloth pinned to the binder in front and behind.

I use the wet bichlorid compresses in all cases unless there is some sufficient contraindication. Sometimes the bichlorid causes irritation, in which case the strength may be reduced. If a 1 to 4,000 solution still causes irritation I use a normal salt solution or dry sterile pads, and use a 1 to 2,000 bichlorid solution for a wash three times a day. With this treatment it is the exception for the lochial discharges to become foul. An absence of bad odor is the exception with any other method of treatment that I have seen. I use the wet compresses for four to six days in average cases. If there are perineal sutures I use them till after the removal of the stitches.

I generally furnish with each case two dozen obstetric pads, made as follows: Pieces of gauze about 12 by 18 inches in size are cut, and also pieces of absorbent cotton about 4 by 10 inches. A piece of cotton is then folded in a piece of gauze, making a pad about 4 by 10 inches. A few pads two or three times as large as the above are desirable for the first day, while the discharges are free. These pads when used wet need not be otherwise sterilized than by soaking in boiling bichlorid solution for ten minutes.

Results.—The question naturally arises, what better results follow this method than follow other methods in the conduct of labor? We know that the above technique is carried out in comparatively few of the ninety thousand births which occur in Illinois annually. Some of the hospitals have reported from three to five thousand births without a single death from infection. The great puerperal mortality comes not from the hospitals but from private practice. I have no doubt that incompetent midwives are responsible for a large part of puerperal mortality. But I positively know that an undue amount comes from the general

practitioner. I wish to give my experience. I have heard men tell their method of obstetrical practice and then say that they never lost a case. Tell me your method and I'll tell you your record. No man need say that he uses slip-shod methods and has no puerperal mortality. If he does not have it is evidence that he has no obstetrical patients. I challenge any man who gives no attention to the modern antiseptic conduct of labor to compare his record with mine. I will give you the facts of my cases and let you be the judge as to whether the technique described prevents infection or not. I have kept pretty close watch of my patients and have the following variations from the normal course to report.

In one case the woman was taken the third day with sore throat, fever, severe headache, etc., and I made a diagnosis of influenza. The illness lasted three days. There was not at any time anything to lead me to suppose that there was puerperal infection. In another case a woman having a "caked" breast had a temperature of 102 or 103 for about two days. I was unable to find any other evidence of infection. Another woman had a temperature of 102 or more at time of confinement. I believe that she had influenza at the time. There never were any symptoms of infection. Another woman who had a "cold" and cough at time of confinement had a chill on the thirteenth day. She developed high fever, a pain in the side of the chest and rusty sputum the next day. The following day I was surprised to find the temperature normal. No physical evidence of pneumonia could be found. Recovery was uneventful and there were never any symptoms of infection. Last year I had two cases of infection. In the first case a trained nurse was in attendance and the labor was conducted without a single internal examination. A perineal laceration was sutured under what I thought to be good antiseptic technique. There was free purulent discharge and temperature of 103 on the fifth day. A single gentle curettage, using a rinsing curette and a 1 to 4,000 bichlorid solution was followed by permanent normal temperature in six hours. Two weeks later I had another case almost exactly like the one preceding. The treatment and results were the same. Another woman had valvular disease of the heart. She had not had proper care during pregnancy and was in a terribly toxic condition at confinement time. Labor was normal and her recovery was better than expected. She was up the third week. In the latter part of the fourth week she was taken with symptoms resembling appendicitis. I was not sure whether there was uterine infection or not. She was kept in bed on regulated diet and carefully nursed. She improved until the second week of her illness, when general peritonitis rapidly developed, causing her death on the forty-eighth day after confinement.

I believe that I have had only two cases of puerperal infection in over ten years of general practice. I believe that such a record can be obtained only by giving attention to the details in the conduct of labor cases. I am acquainted with physicians who have not practiced longer than I, who would require the fingers of both hands upon which to count the number of women who have died of puerperal infection under their care. I know one physician who lost four such cases during one winter. I got hold of one of his cases once. The woman had a temperature of 103 or 104, was in a cold perspiration, limbs cold to the knees, was vomiting and had a distended and tender abdomen. The discharges were foul to an extreme degree. The doctor had visited her that morning. No effort had been made to clean up the patient. No effort had been made at any time to clean up. Even the first cleansing and the changing of the bed had been left to a neighbor woman.

I protest against such things as this. And yet that man is not all there are of that class. I positively know that there are more, but the proportion of such is not large. But we should all try to improve ourselves, and see to it that no orphans can point their fingers at us and say, "'Twas you who robbed me of a mother's care and a mother's love." Let no little mounds of earth be raised as a perpetual monument to our lack of faithfulness. Let us be faithful to our trust. Our reward in dollars and cents may not be commensurate with our service, but there is a reward which shall outlive our day, and of which we may some time be proud.

Dr. E. B. Owens, of Dixon, read a very interesting paper on "Cesarean Section, with Report of a Case," which was greatly appreciated, but for want of time the discussion was postponed, together with Dr. Cheadle's paper, until Dr. Cotton had spoken, he having been unable to present his paper the previous day.

Dr. A. C. Cotton, of Chicago, then gave his interesting and exhaustive treatise of infant feeding.

This completed the program, all having responded except Charles D. Thomas, of Peoria, and Denslow Lewis, of Chicago, who had informed the secretary by letter that they could not be present, and C. G. Beard, of Sterling, moved we adjourn to meet in December, 1909.

OGLE COUNTY.

The Ogle County Medical Society met in regular session in the lecture room of the library in Polo, Ill., Wednesday, July 21, 1909. Dr. J. M. Beveredge, of Oregon, presided. The minutes of the previous meeting were read by the secretary and approved. Among the visiting physicians present were Drs. Owens, Le Sage, Law, Murphy and Hunt, of Dixon; Dr. Powell, of Forreston; Dr. McPherson, of Hazelhurst; Dr. Runnels, of Milledgeville, and Dr. Donaldson, of Polo. There were also present Mrs. W. A. Herrick, superintendent of the Bethwell Sanatorium, Miss Marian Hamilton, of Dixon, Miss Helene Hackett, graduate nurses, and Miss Walker, of Polo.

Among the physicians of the society present were Drs. Beveredge, of Oregon; Brown, of Forreston; Kretsinger, of Leaf River; Brigham, of Brookville; Beard, Maxwell, Krebbs, Houston, Powell and Keetor, of Polo. The following officers were elected for the coming year: President, Dr. J. M. Beveredge, of Oregon; vice-president, Dr. L. A. Beard, of Polo; secretary-treasurer, Dr. J. T. Kretsinger, of Leaf River; delegate to the State Medical Association at Danville, Dr. Geo. Maxwell, of Polo; alternate, Dr. S. D. Houston, of Polo; censor, Dr. C. R. Brigham, of Brookville. Dr. E. B. Owens, of Dixon, read an able paper, "Surgery of the Gall Tract." This subject was well discussed by Drs. Law, Hunt, Murphy, Donaldson, Maxwell and Keetor. Dr. C. A. LeSage, of Dixon, read an excellent paper, "The Necessity of the Early and Frequent Examination of the Ears of Children During the Acute Infections," which was discussed by Drs. Owen, Hunt, Beard, Keetor and Murphy. Dr. Owen's and Dr. LeSage's papers were full of interest and of great worth to every member present. The society expressed its gratitude to the doctors and all visiting friends present by a vote of thanks. The meeting adjourned to meet in Oregon the third Wednesday in October, 1909.

DR. J. T. KRETSINGER, Secretary.

NEWS OF THE STATE

PERSONAL.

Dr. and Mrs. Fenton B. Turck, Chicago, have gone abroad.

Dr. and Mrs. R. Jay Atwood, Paxton, sailed for Europe August 2.

Dr. Louis J. Linder, East St. Louis, sailed for Europe September 2.

Dr. Edward Hasson, Peoria, was operated on for appendicitis August 10 at Proctor Hospital..

Dr. William S. Howell, Winnebago, has been appointed local surgeon for the Northwestern system.

Dr. W. G. Caron, Aurora, has been appointed supreme treasurer of the Knights of North America.

It is to be hoped that Dr. Cook will maintain his professional dignity in his dispute with Commodore Peary.

Dr. W. E. Taylor of the Watertown Hospital was granted six months' leave of absence, becoming effective August 1.

Dr. William Rittenhouse, Chicago, who was injured recently in a street car accident, has recovered and resumed practice.

Dr. John Guy, Woodstock, spent four months in Europe looking up the newest in medicine and surgery in the various hospitals.

Dr John M. Phifer, Stewardson, has been appointed assistant surgeon of the Atchison, Topeka & Santa Fe Hospital at Topeka.

Dr. L. A. McFadden, Peoria, who was operated on recently in St. Francis Hospital for intestinal obstruction, is reported to be improving.

Dr. G. W. Lipshulch, Chicago, was elected president of the Kosher Hospital Association, which is planning the erection of a new building.

Dr. Henry M. Bascom, Ottawa, has been appointed chief surgeon of the Illinois Traction Company and of the hospital association of that system.

Dr. Harriet McDaniels, Murphysboro, is spending some time in the college clinics. The Doctor lost her husband recently and is taking up his practice.

Dr. S. Josephine McCollum, recently medical superintendent and for ten years anesthetist at Mary Thompson Hospital, has withdrawn, entered private practice, and will make anesthetics a specialty.

Prof. C. Yelverton Pearson and son, Dr. Pearson, of Cork, Ireland, were interested visitors at a demonstration by Dr. Emil G. Beck of the use of bismuth paste at the North Chicago Hospital on Labor day.

Dr. J. H. Roach, Wheaton, has returned to practice after spending some time in postgraduate work in Chicago. Dr. J. G. Stone, who looked after his practice during his absence, has located in Burlington, Iowa.

Dr. W. L. Baum of Chicago received an ovation at a dinner in his honor given by the Chicago Yacht Club in recognition of his trip to Bermuda in his yacht, the Amorita. The members of the club hailed the doctor as a gallant sailor man and congratulated themselves on the acquisition by the club fleet of the largest sailing yacht on the great lakes. In the Mackinaw race July 24 the Amorita was first "over the bar," but it lost to the Valmore on time allowance. It is to be hoped a later race will have a more decided outcome.

NEWS ITEMS.

Chicago doctors, attention!

Your new street number, if you please?

If your address on THE JOURNAL wrapper is incorrect, please send correct address to the assistant editor, 4603 Evanston avenue, Chicago.

The civil service commission on September 3 sustained the charges of Health Commissioner Evans against Dr. Joseph F. Biehn and ordered that he "be removed from his office as superintendent of the laboratory of the department of health and from the service of the City of Chicago."

By the will of the late Judge Solomon H. Bethea $150,000 is bequeathed to the Dixon Public Hospital on condition that the name of the hospital be changed to the Katherine Shaw Bethea Hospital and that the income from the money be used to care for the poor patients of Dixon and Palmyra townships.

The stereoscopic photograph accompanying Dr. Beck's article should be examined with a stereoscope to bring out the details. Figure 2, illustrating the post-tubercular scars, referred to in the article, was not finished in time to insert in THE JOURNAL. Anyone desiring can secure a copy of this card from Dr. Beck.

Under the direction of E. B. Huey of Western Pennsylvania University at Allegheny, a department of psychology has been opened at the Institute for Feeble-minded at Lincoln. The object of the new department, which is the first of its kind in the United States, is to study the minds of the inmates of the institution and ascertain how they may best be employed.

Mrs. Nelson Morris, widow of Nelson Morris, the late Chicago packer, has presented Michael Reese Hospital with $250,000 for the construction of a building for medical research.

The cable announcing the sudden death of Mrs. Morris following an automobile accident in France and mentioning her many charities arrived soon after the announcement of her bequest to the Michael Reese Hospital. "*Requiescat in pace.*"

Dr. Frank P. Norbury of Jacksonville was appointed superintendent of the Kankakee Hospital for the Insane, September 7, to succeed Dr. James L. Greene, whom Governor Deneen made the alienist for the state

board of control of the state charitable institution. Dr. Norbury has had a long and valuable experience at various institutions in this state and elsewhere, and no doubt will continue the successful administration of the Kankakee institution inaugurated by Dr. Greene.

PUBLIC HEALTH.

Typhoid is said to be epidemic at Pesotum.

The laboratory of the Chicago Department of Health has been removed to the first floor of 218 Washington street.

Dr. H. W. Dale, McLeansboro, states that several samples of water from the city hydrants were reported unwholesome upon examination by the State Board of Health.

It is planned to have a tent colony in operation in old Prospect Park, Peoria, by the first of this month. The institution is expected to be self-sustaining after the first six months.

The school for tuberculous children which has been maintained by the Board of Education and the Chicago Tuberculosis Institution at Seventy-Fifth street and Vincennes road closed September 2.

The physicians of Monmouth are reported as being anxious over a number of cases of typhoid fever there recently. They are advising the public who use well-water to boil it. The city water is not contaminated.

At the Veterinary Medical Convention held in Chicago last month Dr. A. D. Melvin, head of the Bureau of Animal Industry, United States Department of Agriculture, advocated payment to farmers whose stock is condemned as tubercular to the extent of at least 50 per cent. of its value.

In the comparison between eight months of 1909 and 1908 there were thirty-three fewer deaths from typhoid fever and 533 fewer deaths from all causes under one year of age. The deaths from pneumonia increased from 2,691 to 3,380. By combining the figures for pneumonia, bronchitis and influenza—the so-called impure air diseases—a saving of fifty-seven lives is shown. The death rate from all causes dropped from 14.45 to 14.16 per thousand.

The annual report of the board of inspection of the Chicago House of Correction states that a saving of at least $30,000 a year can be secured by transferring all juvenile commitments from the House of Correction to the State School for Boys at St. Charles. Dr. C. Sceleth, the house physician of the school, states that 314 operations were performed at the institution and that 150 prisoners not capable of manual labor on account of their ailments were enabled as the result of operations to do a hard day's work upon leaving the institution.

The Bulletin of the Department of Health of Chicago reviewing the mortality returns for August noted an increase of thirty-two deaths from diarrheal diseases under two years of age, as compared with August, 1908, in spite of the very active campaign of education by the department in conjunction with the Associated Charities and other organiza-

tions and individuals. Special investigations of the sanitary conditions of the premises and reports on the food of the infants and on the nativity of the decedent's parents are made in all these cases. The mode of life of the Slavonian families gives them a sinister prominence on the death roll, with the Italians a bad second. The total deaths under one year were fifteen fewer, and the total death rate dropped from 14.62 to 14.57 per thousand.

CHANGE OF LOCATION.

Dr. C. M. Kaley has removed from Newton to Olney.

Dr. W. F. Ernest, of Ashkum, has retired from practice.

Dr. William V. Secker has removed from Evanston to Tolono, Ill.

Dr. John B. Scruggs has removed from O'Fallon to Shawnee, Okla.

Dr. W. C. Richman has removed from East St. Louis to Maryville, Ill.

Dr. Cynthia A. Skinner has removed from Monmouth to Los Angeles, Cal.

Dr. T. G. Knappenberger has removed from Macomb to West Pullman.

Dr. W. J. J. Paris has removed from Cave-in-Rock, Ill., to Paragould, Ark.

Dr. Walter C. Mason, of 1653 West Sixty-Third street, Chicago, has removed to Ashkum.

Dr. George Washburn has removed from Hanna City to No. 219 Cooper Street, Peoria.

Dr. Louis F. Alrutz has removed from 1219 South Harding Avenue, Chicago, to Oregon, Ill.

Dr. Carl J. F. Rochow has removed from Lincoln to No. 1206 Fourth Avenue, Rock Island, Ill.

Dr. W. Swartout, formerly of Wilmette, has located at Evanston and Wilson avenues, Chicago.

Dr. Frederick H. Martin has removed from Libertyville to 1440 Glenarm Street, Denver, Colo.

Dr. Elmore S. Pettyjohn has removed from 902 Stewart Building, Chicago, to Topeka, Kans.

Dr. Louis J. Linder of East St. Louis, Ill., has gone to Vienna, where he will spend a year.

Dr. Walter E. Nowers has removed from No. 1119 West Fifty-ninth Street, Chicago, to Kenesaw, Neb.

Dr. W. T. Tinsley, of Tolono, has removed to Cantrall and purchased the property of Dr. O. P. Grant.

Dr. John H. Fulgham has removed from Lebanon to East St. Louis, Ill., Second Street and St. Clair Avenue.

Dr. Charles E. Wright has removed from Vancouver, B. C., to Rockford, and taken offices in the Masonic Temple.

Dr. O. P. Grant, of Cantrall, has removed to Easton and entered into partnership with his brother, Dr. W. R. Grant.

Dr. Allen B. Kanavel has removed his office from 983 East Fifty-sixth Street to 1368 East Fifty-third Street, Chicago.

Dr. E. L. Crouch has removed from Mt. Vernon, Ill., to New York City. His address there will be Postgraduate Medical School.

Dr. Arthur L. Sherrill, formerly at No. 846 First National Bank Building, Chicago, has moved to Frick Building, Pittsburg, Pa.

Dr. F. A. Holzhauer has removed from Chicago to Buckingham, Ill., where he has purchased the practice of Dr. G. H. Just, who has removed to Pukwana, South Dakota.

Dr. Elva A. Wright is taking a short course in medicine at the University of Edinburgh, and expects to return to his home in Lake Forest, Ill., the latter part of October.

Dr. G. H. Just has removed from Buckingham, Ill., to Pukwana, Brule County, South Dakota, having sold out his practice at Buckingham to Dr. F. A. Holzhauer, formerly of Chicago.

MARRIAGES.

Irvin S. Koll, M.D., to Miss Melanie Alice Weil, both of Chicago, September 8.

Almerin W. Baer, M.D., Chicago, to Miss Rose Berns of Peabody, Kan., August 28.

Aria Louis Derdiger, M.D., to Miss Ella Jane Spicer, both of Chicago, September 4.

E. C. Ferguson, M.D., to Miss Etta Louise Schwarz, both of Edwardsville, September 7.

Joseph B. Bywater, M.D., Mount Morris, Ill., to Miss Ethel Dunham of Manchester, Iowa, recently.

Myron E. Bennett, M.D., to Mary Margaret Wheeler, M.D., both of Grant Park, at the residence of Dr. and Mrs. Herbert Wheeler, Sept. 6, 1909. This marriage is unusual and has been remarked in the daily press, because the bride is the daughter of a doctor, herself a doctor and marries a doctor. All parties concerned are to be congratulated.

DEATHS.

Knud L. Boysen, M.D., Kiel, Germany, 1863, died at his home in Chicago, August 25, from nephritis.

Charles Alexander Garnsey, M.D. (license, Ill.; years of practice, 1878), for sixty-five years a practitioner, died at his home in Batavia, Ill., August 19, aged 95.

GEORGE A. MARTIN, M.D., Medical College of Ohio, Cincinnati, 1877; a veteran of the Civil War; died at his home in Brownstown, Ill., August 28, from nephritis, aged 64.

GEORGE MANTON ANGELL, M.D. Harvard Medical School, Boston, 1847; died recently at his home in Atlanta, Ill., from senile debility, and was buried September 1, aged 89.

CARL ERNEST KURTZ, M.D. University of Pennsylvania, 1869; a member of the American Medical Association; died at his home in Chicago, September 6, from heart disease, aged 68.

ALLEN DE TURK HUNTER, M.D., Jefferson Medical College, Philadelphia, 1884; a member of the Illinois State Medical Society; died at his home in Savannah, Ill., August 18, after an operation for peritonitis, aged 46.

WILLIAM T. GRIFFITH (license Ill., years of practice, 1887); for forty-six years a practitioner of Washington, Ill., and formerly coroner of Tazewell County; died at his home in Washington, September 2, from heart disease, aged 76.

RUDOLPH GMELIN, M.D. University of Tübingen, Germany, 1854; a volunteer surgeon during the Franco-Prussian War, and later a practitioner of Chicago, Milwaukee, and Elkader, Iowa; died at his home in the latter city, August 3, from heart disease, aged 78.

GEORGE FRANCIS SHEARS, M.D. Hahnemann Medical College, Chicago, 1880; president and senior professor of surgery in Hahnemann Medical College, and one of the most prominent homeopathic practitioners of the middle west; consulting surgeon to the Cook County, Streeter and Silver Cross hospitals; attending surgeon to Hahnemann Hospital; director of the Chicago Tuberculosis Institute, and assistant editor of the *Clinique;* died at his home in Chicago, August 27, from paresis, aged 52.

CHARLES T. WILBUR, M.D., Berkshire Medical College, Pittsfield, Mass., 1860; a member of the Michigan State Medical Society; assistant surgeon and surgeon of the Fifty-Ninth and Ninety-Fifth Ohio Volunteer Infantry during the Civil War; from 1869 to 1884 superintendent of the Illinois State Institution for the Feeble-Minded at Jacksonville and Lincoln; superintendent and proprietor of the Wilbur Home for the Feeble-Minded, Kalamazoo, Mich.; a member of the board of trustees of the State Institution for the Feeble-Minded, Lapeer; died suddenly at his home in Kalamazoo, August 19, from cerebral embolism, aged 74.

W. E. HAINES, M.D., died Sept. 9, 1909, at his home in Bushnell, from nephritis and uremia, having been in failing health for some time, aged 70 years. He was born in Chester County, Pennsylvania, in 1839. He served for three years in Company G of the Eleventh Illinois Cavalry, then reenlisted and served until the end of the war, when he returned to Pennsylvania and took up the study of medicine in Pennsylvania University at Philadelphia, where he graduated in 1867, and the same year was

united in marriage with Miss Marianna Starr of Chester County. He then came to Illinois and located at Ellisville, where he remained until 1880, whence he removed to Bushnell, which place has since been his home. Dr. Haines was a member of the Grand Army of the Republic, and also of the Independent Order of Odd Fellows. He held a high place in the regard of his brethren of the medical profession and was recognized as a learned physician and a skilful and experienced surgeon. He was a member of the Bushnell Physicians' Club, the McDonough County Medical Society, the Illinois State Medical Society, and the American Medical Association. He was also an active member of the International Congress on Tuberculosis. Dr. Haines was a man of positive convictions—straightforward, courageous, outspoken. His friendship gripped like hooks of steel and never faltered. He was a good citizen, a loving husband and father, and a neighbor and comrade beyond compare. His kind can ill be spared from a world where there is a field for the best activities of real men. The funeral services were under the auspices of Bushnell Lodge, No. 322, I. O. O. F., and with Carter Van Vleck Post, No. 174, G. A. R., acting as escort. The interment was in Bushnell cemetery and the great attendance was a significant token of the high esteem in which Dr. Haines was held by those among whom he had passed most of his life.

Book Notices.

PRACTICAL DIETETICS. With Special Reference to Diet in Disease. By W. Gilman Thompson, M.D., Professor of Medicine in the Cornell University Medical College in New York City, visiting physician to the Presbyterian and Bellevue Hospitals. Fourth edition, illustrated, enlarged and completely rewritten. New York and London, D. Appleton & Co., 1909. Cloth, $5; half morocco, $6.

Four editions of a work of this character in fourteen years indicates that this book has filled a long-felt want in the medical world. It is certainly the best book of its kind before the medical public and in its improved form should find a large number of dealers.

MINOR OPHTHALMIC AND AURAL TECHNIQUE. A Short Treatise Dealing with Minor Procedures About the Eye and Ear. Adapted to use of those requiring a comprehensive knowledge of this subject. By Alfred Nicholas Murray, M.D., Chicago, assistant in the Department of Otology and Laryngology, Rush Medical College (Children's Memorial Hospital), formerly Clinic Assistant in Ophthalmology, Rush Medical College. One time Voluntary Assistant in the Universitaets Augenklinik, Breslau. Member of the American Medical Association. With 98 illustrations in the text, reproduced from photographs and original drawings. Cleveland Press, Chicago, 1909. Cloth, $3.

Dr. Murray's work takes up a branch of the subject which appeals particularly to the general practitioner in that it deals with the minor procedures which occur in general practice. It is well illustrated by cuts and engravings and will form a safe guide for the nurse and general practitioner

AMERICAN PRACTICE OF SURGERY. Vol. vi. Wm. Wood & Co., New York.

Seventy-five per cent. of the volumes of this system have now appeared and as the set approaches completion the volumes become of more definite, practical interest to the surgeon and practitioner, because of the articles dealing with the

regional surgery. The articles in this volume are particularly concerned with the surgery of the face, head, neck, thorax and spinal column, diseases of the female breast and venereal diseases. The pathological treasures of various surgical centers of America have been drawn upon extensively for illustrations and certainly no one wishing to keep in touch with American surgical practice can afford to be without the volumes so ably edited by Drs. Bryant and Buck. The type, paper, wood-cuts and colored illustrations leave nothing to be desired. We await the remaining volumes of the series with particular interest.

CARE OF MOTHER AND CHILD. By Clarence M. Cheadle, M.D., Member American Medical Association, Illinois State Medical Society, North Central Illinois Medical Association, Lee County Medical Society; with an introduction by Charles Edwin Ruth, M.D., formerly Professor of Surgery and Anatomy, Keokuk Medical College, now of Ponce, Porto Rico. Published by the author, Ashton, Illinois, 1909. Cloth, $2; flexible leather, $2.50.

This book of 350 pages is a novelty in that a country practitioner has published it and it is printed in one of the smaller cities of the country. Of course, this is no criticism, but rather a recommendation and undoubtedly the facts presented are the result of actual contact with the problems affecting the mother and baby from the view-point of the country practitioner in active service. The arrangement is excellent and the advice given is up-to-date in every respect. We can recommend it heartily to our readers and hope that Dr. Cheadle will realize all his expectations in its publication.

TUBERCULOSIS. A Treatise by American Authors on Its Etiology, Pathology, Frequency, Semeiology, Diagnosis, Prognosis, Prevention, and Treatment. Edited by Arnold C. Klebs, M.D., Chicago, with 3 colored plates and 243 illustrations in text. New York and London, D. Appleton & Co., 1909. Price, $6.00 net.

As the author says, the literature on tuberculosis has become so enormous that a continuous and systematic discussion of the whole subject by a single author has become an impossibility. Only the older practitioners can appreciate the remarkable advance which this volume symbolizes. Prior to the discovery of the bacillus tuberculosis by Koch scientists were groping in the dark, and when that epoch-making discovery was made a train of thought was set in action which will certainly result in the suppression of the disease. Some of the best minds in America have been enlisted in this undertaking and the result is a complete résumé of all that was known upon the subject when the forms were closed. It should be in the library of every progressive practitioner in Illinois.

MEDICAL SOCIOLOGY. A Series of Observations Touching Upon the Sociology of Health and the Relations of Medicine to Society. By James Peter Warbasse, M.D., surgeon of the German Hospital, attending surgeon to the Seney M. E. Hospital; member of the American Medical Association, American Association for the Advancement of Science, American Society of Sanitary and Moral Prophylaxis, American Medical Library Association, Ethical Social League, etc. New York and London, D. Appleton & Co., 1909. Price, $2 net.

Dr. Warbasse was for some time editor of the *Journal of the New York Medical Society* and has taken up in this volume of 355 pages a number of live topics which will appeal to the profession as well as to the layman. Among these we mention the following titles of chapters of particular interest: Federal Interest in the Health of the People, Healthfulness and Happiness, The Alcohol Question, The Venereal Peril, The Instruction of the Young in Sexual Hygiene, College Preparation for the Study of Medicine, The Medical Expert Witness, Work and Play, The Doctors' Sons. These are only a few of the many topics which will be found valuable reading for a spare half hour.